

## Statement of Verification

BREG EN EPD No.: 000716

Issue 01

This is to verify that the

### Environmental Product Declaration

provided by:

Al Yamamah Company for Reinforcing Steel Bars

is in accordance with the requirements of:

**EN 15804:2012+A2:2019**

and

**BRE Global Scheme Document SD207**

This declaration is for:

**1 tonne of reinforced steel bars Grade 60 and 80**



### Company Address

Al-Yamamah company for reinforcing steel bars  
8520 King Abdulaziz Road  
Industrial Area  
Yanbu Al Sinaiyah 46492  
Kingdom of Saudi Arabia



Hayley Thomson  
Operator

23 July 2025  
Date of this Issue

23 July 2025  
Date of First Issue

22 July 2030  
Expiry Date



This Statement of Verification is issued subject to terms and conditions (for details visit [www.greenbooklive.com/terms](http://www.greenbooklive.com/terms)).

To check the validity of this statement of verification please, visit [www.greenbooklive.com/check](http://www.greenbooklive.com/check) or contact us.

BRE Global Ltd., Garston, Watford WD25 9XX.  
T: +44 (0)333 321 8811 F: +44 (0)1923 664603 E: [Enquiries@breglobal.com](mailto:Enquiries@breglobal.com)



## Environmental Product Declaration

EPD Number: **000716**

### General Information

EPD Programme Operator	Applicable Product Category Rules
BRE Global Watford, Herts WD25 9XX United Kingdom	BRE 2023 Product Category Rules (PN 514 Rev 3.1) for Type III environmental product declaration of construction products to EN 15804:2012+A2:2019
Commissioner of LCA study	LCA consultant/Tool
Al-Yamamah company for reinforcing steel bars 8520 King Abdulaziz Road Industrial Area Yanbu Al Sinaiyah 46492 Kingdom of Saudi Arabia	Flavie Lowres – BRE LINA A2
Declared/Functional Unit	Applicability/Coverage
1 tonne of reinforced steel bars Grade 60 and 80	Product specific .
EPD Type	Background database
Cradle to Gate with Module C and D	Ecoinvent 3.8
Demonstration of Verification	
CEN standard EN 15804 serves as the core PCR <sup>a</sup>	
Independent verification of the declaration and data according to EN ISO 14025:2010 <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
(Where appropriate <sup>b</sup> )Third party verifier: Francis (Jiacheng) Yu	
a: Product category rules b: Optional for business-to-business communication; mandatory for business-to-consumer communication (see EN ISO 14025:2010, 9.4)	
Comparability	
Environmental product declarations from different programmes may not be comparable if not compliant with EN 15804:2012+A2:2019. Comparability is further dependent on the specific product category rules, system boundaries and allocations, and background data sources. See Clause 5.3 of EN 15804:2012+A2:2019 for further guidance	

## Information modules covered

Product			Construction		Use stage							End-of-life				Benefits and loads beyond the system boundary
					Related to the building fabric				Related to the building							
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw materials supply	Transport	Manufacturing	Transport to site	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, Recovery and/or Recycling potential
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				

Note: Ticks indicate the Information Modules declared.

## Manufacturing site(s)

Al-Yamamah company for reinforcing steel bars  
 8520 King Abdulaziz Road  
 Industrial Area  
 Yanbu Al Sinaiyah 46492  
 Kingdom of Saudi Arabia

## Construction Product:

### Product Description

Reinforcing steel bars (according to product standards listed in Sources of Additional Information) that is obtained from Steel Billets, pre-heated in a walking earth furnace followed by hot rolling. The declared unit is 1 ton of carbon steel reinforcing bars as used within concrete structures that include but are not limited to construction of buildings, bridges, tunnels and other civil works (infrastructures, superstructures, etc.). This EPD covers bars available in thickness from 8 to 36 mm.

Al Yamamah manufactures principally Grade 60 (420 MPa yield strength) reinforced steel, but also Grade 80 (550 MPa yield strength) upon specific project requirements. Both grades are produced according to ASTM A615 and are certified under SASO. Both grades use the same raw materials, the different in strength is achieved via the quenching process.

The results are for 1 tonne of reinforced steel. In order to convert the results for the different diameter, the following conversion table can be used:

diameter (mm)	Conversion factor to get the environmental impact of 1 m of steel rebar for the different diameters
8	3.9E-04
10	6.2E-04
12	8.9E-04
14	1.2E-03
16	1.6E-03
18	2.0E-03

20	2.5E-03
22	3.0E-03
25	3.9E-03
28	4.8E-03
32	6.3E-03
36	8.0E-03

### Technical Information

Property - ASTM A615/A615M	Rebar Grade 60 Value, Unit	Rebar Grade 80 Value, Unit
Density	7850 kg/m <sup>3</sup>	
Typical Modulus of Elasticity for steel	200 GPa	
Weldability (Ceg)	Max 0.5%	
Produced sizes	8 to 36 mm	
Yield Strength	min. 420 MPa	min. 550 MPa
Tensile	min. 550 MPa	min. 690 MPa
Ratio	Min 1.10	Min 1.10
Elongation	(min. 9% for 10 to 20mm) , (min. 8% for 25mm) , (min 7% for 28 to 60mm)	(min. 7% for 10 to 25mm) , (min. 6% for 28 to 60mm)
Bend test requirements	Pass	

The above technical performances were extracted from the test reports provided by Al-Yamamah's testing laboratory for 10, 12, 20, 25 and 32 mm gr80 – test certificate TBC ALYamamah 230890-1. For more information on the products' technical performance, contact the Al-Yamamah technical team here [Contact Us - Get in touch with Al Yamamah Steel Bars manufacturers.](#)



## Main Product Contents

The main product content is:

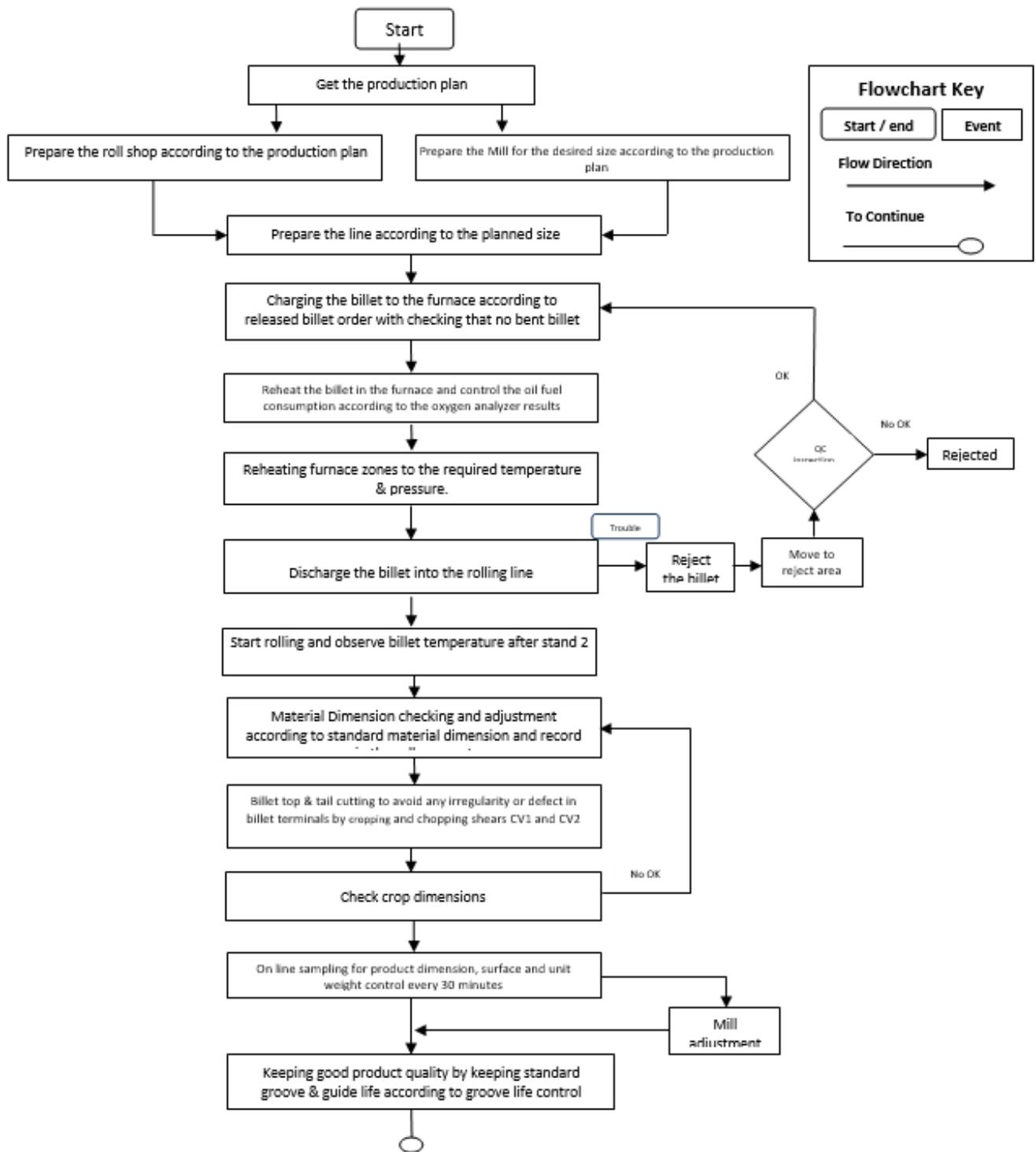
Material/Chemical Input	%
Fe	97
C, Mn, Si, V, Ni, Cu, Cr, Mo and others	3

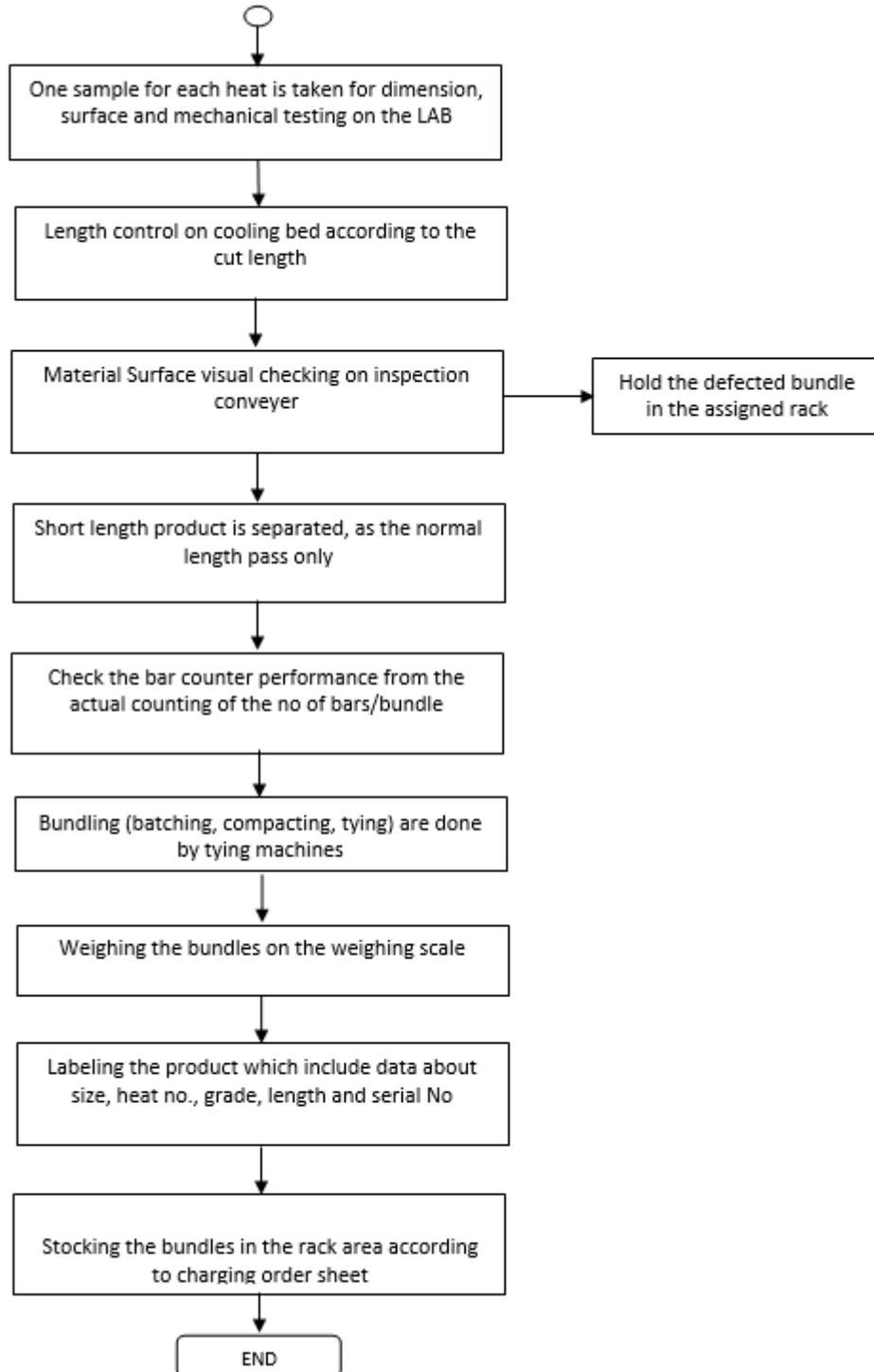
## Manufacturing Process

The manufacturing process is as follows:

1. Receiving raw material (billet) and store in the billet yard by means of overhead cranes.
2. Billet side charged to Reheating furnace and reheated up to 1200 C ° the furnace allows high accuracy, uniformity and wide range of discharged temp.
3. The billet discharged from the furnace to the rolling mill to have the final shape each size according to standard dimensions.
4. At rolling mill outlet, quenching the reinforcement bars throw QTB water box to improve the mechanical properties of the final product.
5. The bars are cut to commercial length
6. Very high-quality control in this stage as the bars are visualized check for any defects and samples taken for mechanical tests.
7. The bars collected according to commercial no. of bars / bundle according to size then tied and stored in racks by means of overhead Crane.

## Process flow diagram





### End of Life

At the end of its life reinforcement steel is recycled. According to BRE's PCR PN514 v3.1, 95% of reinforced steel is recycled and 5% is landfilled.

## Life Cycle Assessment Calculation Rules

### Declared / Functional unit description

1 tonne of reinforced steel bars Grade 60 and 80

### System boundary

This is a cradle-to-gate with modules C and D LCA study in accordance with the modular approach defined by EN 15804:2012+A2:2019 and BRE 2023 Product Category Rules (PN 514 Rev 3.1). It includes the processes covered during the manufacturing stages (A1 to A3) and end of life stages (C1 to C4, and benefits and loads beyond system boundary (D).

### Data sources, quality and allocation

Specific primary data derived from Al Yamamah’s production process in the Yanbu Al Sinaiyah factory (in the Kingdom of Saudi Arabia), have been modelled using the BRE LINA A2 software and the Ecoinvent v3.8 database. In accordance with the requirements of EN15804:2012+A2:2019, the most current available data has been used. The manufacturer specific data from Al Yamamah covers a period of one year (01/01/2023 – 31/12/2023). Secondary data has been obtained for all other upstream and downstream processes that are beyond the control of the manufacturer (i.e. raw material production) from the Ecoinvent v3.8 database.

Al Yamamah only manufacture the product covered in this EPD (97% Grade 60) at its production site; the product assessed in this EPD represents over 99% of the total production of the site (with 1% accounted for a co-product). Calculations were performed to enable allocation of total site energy use, water and waste to the Al Yamamah’s reinforced steel product. Allocation procedures were by mass allocation and are according to EN 15804 and are based on the ISO14044 guidance. All the input and output materials such as packaging, transportation, energy, water use, emissions to air and wastes are included. Only exceptions are emissions to water or soil which are not recorded.

A location based modelling has been used for electricity. The modelling of electricity is based on the dataset “Electricity, medium voltage {SA}| market for electricity, medium voltage | EN15804, U”2014with a GWP 1.015 kg CO<sub>2</sub> eq/kWh. Diesel is used for pre-heating the furnace – a market-based dataset was used for diesel. The dataset used for the steel was sourced from ecoinvent 3.8 which is sourced from World Steel (RoW) and therefore relevant to the product with a GWP value of 1.89 kgCO<sub>2</sub>eq/kWh.

Quality	Geographical representativeness	Technical representativeness	Time representativeness
Very good	Data from area under study. The geographical representativeness is therefore very good	The data have been collected from the manufacturing plant. Data from processes and product under study. Their representativeness is therefore very good	The data were collected in a period less than 2 years ago and therefore the time representativeness is very good The Ecoinvent 3.8 data were released in 2021, so they are representative

### Cut-off criteria

All processes associated with the manufacturing process have been included. All inputs or outputs have been included and all raw materials, packaging and transport, energy, water use, and wastes, are included, and there is no emission to air, water, and soil recorded during the product production therefore it is not included in the analysis.

## LCA Results

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			GWP-total	GWP-fossil	GWP-biogenic	GWP-luluc	ODP	AP	EP-freshwater
			kg CO <sub>2</sub> eq	kg CFC11 eq	mol H <sup>+</sup> eq	kg (PO <sub>4</sub> ) <sup>3-</sup> eq			
Product stage	Raw material supply	A1	1.89E+03	1.89E+03	2.10E+00	1.30E+00	8.76E-05	7.67E+00	8.55E-01
	Transport	A2	1.08E+02	1.08E+02	-7.40E-03	7.72E-02	2.17E-05	3.36E+00	3.73E-03
	Manufacturing	A3	4.64E+02	4.63E+02	5.66E-01	3.79E-02	8.91E-05	4.14E+00	1.25E-02
	Total (Consumption grid)	A1-3	2.46E+03	2.46E+03	2.66E+00	1.41E+00	1.98E-04	1.52E+01	8.72E-01
<b>95% of the reinforced steel is recycled and 5% landfilled</b>									
End of life	Deconstruction, demolition	C1	8.88E-01	8.87E-01	3.13E-04	8.85E-05	1.90E-07	9.22E-03	2.75E-05
	Transport	C2	8.32E+00	8.31E+00	7.08E-03	3.26E-03	1.92E-06	3.37E-02	5.35E-04
	Waste processing	C3	5.47E+01	5.47E+01	1.93E-02	5.46E-03	1.17E-05	5.68E-01	1.69E-03
	Disposal	C4	2.64E-01	2.63E-01	2.61E-04	2.49E-04	1.07E-07	2.48E-03	2.41E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.15E+03	-1.15E+03	3.61E+00	-3.26E-01	-4.60E-05	-4.18E+00	-4.55E-01

GWP-total = Global warming potential, total;  
 GWP-fossil = Global warming potential, fossil;  
 GWP-biogenic = Global warming potential, biogenic;  
 GWP-luluc = Global warming potential, land use and land use change;

ODP = Depletion potential of the stratospheric ozone layer;  
 AP = Acidification potential, accumulated exceedance; and  
 EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment

## LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			EP-marine	EP-terrestrial	POCP	ADP-mineral & metals	ADP-fossil	WDP	PM
			kg N eq	mol N eq	kg NMVOC eq	kg Sb eq	MJ, net calorific value	m <sup>3</sup> world eq deprived	disease incidence
Product stage	Raw material supply	A1	1.84E+00	1.85E+01	8.72E+00	1.02E-02	1.88E+04	4.23E+02	1.49E-04
	Transport	A2	8.28E-01	9.19E+00	2.38E+00	1.61E-04	1.40E+03	3.49E+00	3.69E-06
	Manufacturing	A3	1.58E+00	1.72E+01	4.77E+00	3.28E-04	6.25E+03	2.03E+01	9.37E-05
	Total (Consumption grid)	A1-3	4.25E+00	4.49E+01	1.59E+01	1.07E-02	2.65E+04	4.47E+02	2.46E-04
<b>95% of the reinforced steel is recycled and 5% landfilled</b>									
End of life	Deconstruction, demolition	C1	4.08E-03	4.47E-02	1.23E-02	4.56E-07	1.22E+01	2.81E-02	2.47E-07
	Transport	C2	1.02E-02	1.11E-01	3.40E-02	2.89E-05	1.26E+02	5.65E-01	7.17E-07
	Waste processing	C3	2.52E-01	2.76E+00	7.58E-01	2.81E-05	7.50E+02	1.73E+00	1.52E-05
	Disposal	C4	8.61E-04	9.42E-03	2.74E-03	6.01E-07	7.35E+00	3.37E-01	4.99E-08
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-9.91E-01	-1.05E+01	-5.78E+00	-8.68E-04	-1.16E+04	-8.25E+01	-7.70E-05

EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment;  
 EP-terrestrial = Eutrophication potential, accumulated exceedance;  
 POCP = Formation potential of tropospheric ozone;  
 ADP-mineral&metals = Abiotic depletion potential for non-fossil resources;

ADP-fossil = Depletion potential of the stratospheric ozone layer;  
 WDP = Water (user) deprivation potential, deprivation-weighted water consumption; and  
 PM = Particulate matter.

## LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing environmental impacts			IRP	ETP-fw	HTP-c	HTP-nc	SQP
			kBq U <sup>235</sup> eq	CTUe	CTUh	CTUh	dimensionless
Product stage	Raw material supply	A1	5.97E+01	5.58E+04	1.28E-05	4.89E-05	5.61E+03
	Transport	A2	6.38E+00	8.73E+02	6.40E-08	5.91E-07	2.37E+02
	Manufacturing	A3	2.41E+01	3.59E+03	1.36E-07	2.36E-06	7.17E+02
	Total (Consumption grid)	A1-3	9.03E+01	6.03E+04	1.30E-05	5.18E-05	6.57E+03
<b>95% of the reinforced steel is recycled and 5% landfilled</b>							
End of life	Deconstruction, demolition	C1	5.49E-02	7.12E+00	2.75E-10	5.16E-09	1.55E+00
	Transport	C2	6.46E-01	9.81E+01	3.18E-09	1.03E-07	8.63E+01
	Waste processing	C3	3.38E+00	4.39E+02	1.70E-08	3.18E-07	9.55E+01
	Disposal	C4	3.27E-02	4.64E+00	1.18E-10	3.05E-09	1.54E+01
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.06E+01	-3.44E+04	-6.15E-06	-2.37E-05	-2.27E+03

IRP = Potential human exposure efficiency relative to U235;  
ETP-fw = Potential comparative toxic unit for ecosystems;  
HTP-c = Potential comparative toxic unit for humans;

HTP-nc = Potential comparative toxic unit for humans; and  
SQP = Potential soil quality index.

## LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, primary energy			PERE	PERM	PERT	PENRE	PENRM	PENRT
			MJ	MJ	MJ	MJ	MJ	MJ
Product stage	Raw material supply	A1	1.25E+03	0.00E+00	1.25E+03	2.21E+04	0.00E+00	2.21E+04
	Transport	A2	1.01E+01	0.00E+00	1.01E+01	1.37E+03	0.00E+00	1.37E+03
	Manufacturing	A3	2.73E+01	2.86E+00	3.02E+01	6.14E+03	5.61E+00	6.14E+03
	Total (Consumption grid)	A1-3	1.28E+03	2.86E+00	1.29E+03	2.96E+04	5.61E+00	2.96E+04
<b>95% of the reinforced steel is recycled and 5% landfilled</b>								
End of life	Deconstruction, demolition	C1	6.82E-02	0.00E+00	6.82E-02	1.19E+01	0.00E+00	1.19E+01
	Transport	C2	1.77E+00	0.00E+00	1.77E+00	1.23E+02	0.00E+00	1.23E+02
	Waste processing	C3	4.20E+00	0.00E+00	4.20E+00	7.36E+02	0.00E+00	7.36E+02
	Disposal	C4	6.27E-02	0.00E+00	6.27E-02	7.22E+00	0.00E+00	7.22E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-2.40E+02	0.00E+00	-2.40E+02	-1.15E+04	0.00E+00	-1.15E+04

PERE = Use of renewable primary energy excluding renewable primary energy used as raw materials;  
 PERM = Use of renewable primary energy resources used as raw materials;  
 PERT = Total use of renewable primary energy resources;

PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials;  
 PENRM = Use of non-renewable primary energy resources used as raw materials;  
 PENRT = Total use of non-renewable primary energy resource

### LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Parameters describing resource use, secondary materials and fuels, use of water						
			SM	RSF	NRSF	FW
			kg	MJ net calorific value	MJ net calorific value	m <sup>3</sup>
Product stage	Raw material supply	A1	2.83E+02	1.37E-01	0.00E+00	1.28E+01
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	8.62E-02
	Manufacturing	A3	1.65E+00	0.00E+00	0.00E+00	4.90E-01
	Total (Consumption grid)	A1-3	2.84E+02	1.37E-01	0.00E+00	1.34E+01
<b>95% of the reinforced steel is recycled and 5% landfilled</b>						
End of life	Deconstruction, demolition	C1	4.67E-03	0.00E+00	0.00E+00	6.94E-04
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	1.40E-02
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	4.28E-02
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	7.88E-03
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	-2.00E+00

SM = Use of secondary material;  
RSF = Use of renewable secondary fuels;

NRSF = Use of non-renewable secondary fuels;  
FW = Net use of fresh water

## LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing waste categories			HWD	NHWD	RWD
			kg	kg	kg
Product stage	Raw material supply	A1	5.09E+02	3.13E+03	3.37E-02
	Transport	A2	1.85E+00	1.60E+01	9.71E-03
	Manufacturing	A3	6.45E+00	4.86E+01	3.71E-02
	Total (Consumption grid)	A1-3	5.17E+02	3.19E+03	8.05E-02
<b>95% of the reinforced steel is recycled and 5% landfilled</b>					
End of life	Deconstruction, demolition	C1	1.60E-02	1.12E-01	8.41E-05
	Transport	C2	1.39E-01	2.46E+00	8.50E-04
	Waste processing	C3	9.88E-01	6.92E+00	5.18E-03
	Disposal	C4	7.65E-03	1.08E-01	4.82E-05
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	-1.06E+02	-2.19E+03	-1.23E-02

HWD = Hazardous waste disposed;  
 NHWD = Non-hazardous waste disposed;  
 RWD = Radioactive waste disposed

### LCA Results (continued)

(MND = module not declared; MNR = module not relevant; INA = indicator not assessed; AGG = aggregated)

Other environmental information describing output flows – at end of life								
			CRU	MFR	MER	EE	Biogenic carbon (product)	Biogenic carbon (packaging)
			kg	kg	kg	MJ per energy carrier	kg C	kg C
Product stage	Raw material supply	A1	0.00E+00	1.50E-01	2.98E-03	1.41E+01	0.00E+00	0.00E+00
	Transport	A2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Manufacturing	A3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-1.01E-04
	Total (Consumption grid)	A1-3	0.00E+00	1.50E-01	2.98E-03	1.41E+01	0.00E+00	-1.01E-04
<b>95% of the reinforced steel is recycled and 5% landfilled</b>								
End of life	Deconstruction, demolition	C1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Transport	C2	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Waste processing	C3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Disposal	C4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Potential benefits and loads beyond the system boundaries	Reuse, recovery, recycling potential	D	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

CRU = Components for reuse;  
MFR = Materials for recycling

MER = Materials for energy recovery;  
EE = Exported Energy

## Interpretation of results

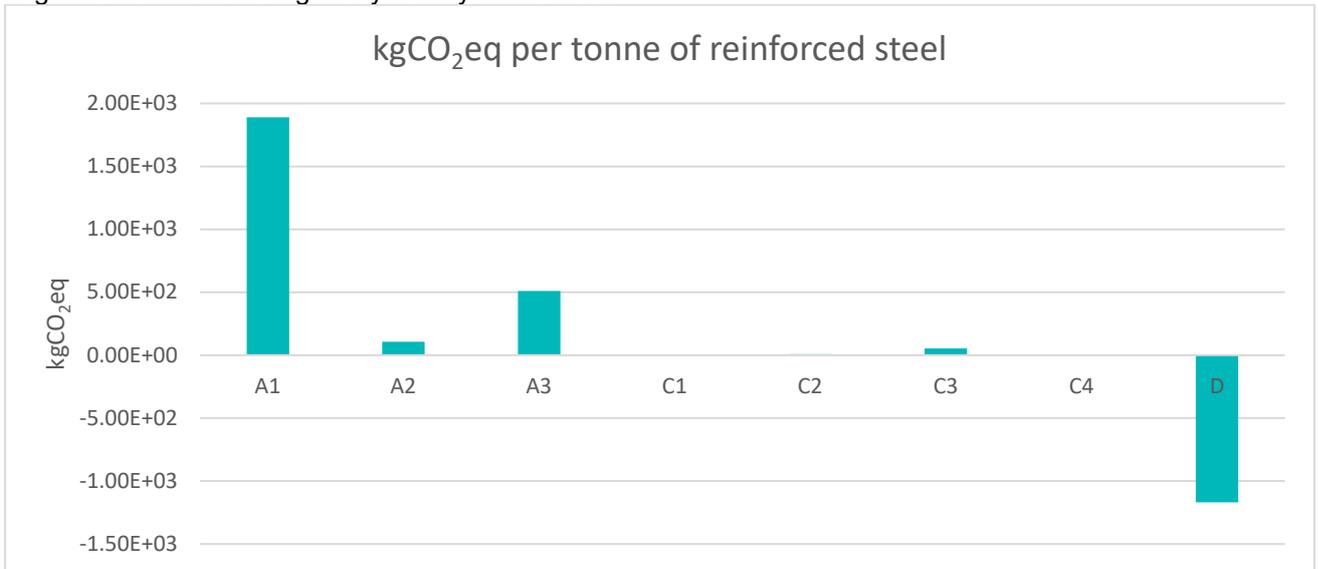
### Scenarios and additional technical information

Scenarios and additional technical information			
Scenario	Parameter	Units	Results
C1 to C4 End of life,	In the UK, at the end of its life reinforcement steel is recycled. According to BRE's PCR PN514 v3.1, 95% of reinforced steel is recycled and 5% is landfilled		
C1 – Deconstruction, demolition	Reinforced steel is typically taken out of a building during demolition and in particular during the crushing of concrete. It is estimated that 0.000254 litres of diesel is used to extract 1 kg of reinforced steel according to calculations from Al Yamamah. Typically 100% of the steel is recovered from a building and 95% is recycled	litres of diesel	0.000254
C2 - Transportation	50km by road has been modelled for module C2 as a typical distance from the demolition site to the disposal unit. However, end-users of the EPD can use this information to calculate the impacts of a bespoke transport distance for module C2 if require	km	50
C3 – Pre-processing	Reinforced steel is embedded in concrete when installed. The concrete is crushed and the steel is separated. For the purpose of this LCA, it has been assumed that 95% of steel is recycled to make new steel – based on BRE's PCR PN514 Rev 3.1.	%	95
C4 - Disposal	5% of the steel is sent to landfill – based on BRE's PCR PN514 Rev 3.1	%	5
Module D	95% of the product assessed is recycled according to the BRE's PCR PN514 Rev 3.1. It has been assumed that the recycled content of the steel is 27% according to theecoinvent 3.8 dataset. Quantity included in future benefits: $(1000-283)*95\% = 681$ kg		

## Summary, comments and additional information

### Interpretation of the results

Steel billet is the only raw material. 75% of GWP impact of A1-A3 of 1 tonne of reinforced steel are associated with the steel dataset. Less than 1% of the impact is attributable to the ancillary materials. Module D is negative thanks to the high recyclability of the steel.



## References

BSI. Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products. BS EN 15804:2012+A2:2019. London, BSI, 2019.

BSI. Environmental labels and declarations – Type III Environmental declarations – Principles and procedures. BS EN ISO 14025:2010 (exactly identical to ISO 14025:2006). London, BSI, 2010.

BSI. Environmental management – Life cycle assessment – Principles and framework. BS EN ISO 14040:2006. London, BSI, 2006.

BSI. Environmental management – Life cycle assessment – requirements and guidelines. BS EN ISO 14044:2006. London, BSI, 2006.

ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement