

# CEMEX and Stabilised Pavements Ltd

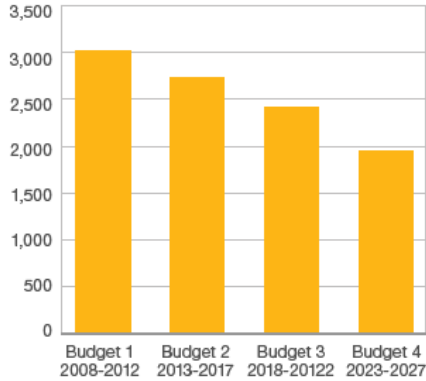
## CO2 and resource efficiency

### June 2014



## The UK's falling carbon budget, 2008-2027

Millions of tonnes of carbon dioxide equivalent



Source: CCC calculations



Climate Change Act  
2008  
2008 CHAPTER 27





# Verified CO2 labelling to all cements

## The only Cement Company in the world to offer labelling



# Rugby®

## PREMIUM

# CEMENT

Portland-limestone cement BS EN 197-1 - CEM III/A-L 32,5 R

- ✓ For concrete, mortar, rendering or screeds
- ✓ Improved workability and cohesion
- ✓ Lighter colour ideal for lighter finish in mortars and concrete

20kg  
PER  
25kg BAG

Footprint

The entire lifecycle of the product from 'cradle to gate' is verified (CO2) by auditing (DNV) (04/2021). For more information please visit [www.cemex.com/footprint](http://www.cemex.com/footprint)

### Product Carbon Footprint Verification Statement

**Client:** CEMEX Rugby

**Functional unit:** 1 tonne of cement with a specific clinker content

#### Conclusion

Based on our independent verification of the processes and procedures currently employed by CEMEX, the carbon footprint calculations for the cements produced at the Rugby site **are materially correct and are a fair representation of the GHG emissions associated with the partial carbon footprint of cement. The emissions estimates stated by CEMEX have been prepared in accordance with accepted, referenced methodologies for the calculation of the Carbon Footprint of Products, using a "Cradle to Gate" approach.**

Cement type	Bulk/Bagged	Unit (acc. S.I.)	% Clinker content	Kg CO <sub>2</sub> e / unit
CEM II 42.5 N	Bulk	tonnes (t)	68,5	708
CEM I 52.5 N OP 400	Bulk	tonnes (t)	91	912
CEM I 52.5 R RH	Bulk	tonnes (t)	91	922
CEM I 52.5 N OP	Bulk	tonnes (t)	91	922
CEM II 32.5 N	Bag	25 Kg	65	17,3
CEM II 32.5 R Premium	Bag	25 Kg	76	20,1

Ricardo Álvarez Muiña  
Lead Verifier

John Pepper  
Technical Project Manager



# Worked with SPL to devise a carbon and resource calculator

## Stabilised Pavements CO2 calculator vs. Standard asphalt - rural

**Project:** Devon CC & SW Highways: 7 mile straight

Mix	Project m2	Project depth (mm)	Project tonnes	kms transport of plant to site	Raw material	CO2 per tonne (Origin, kg)	% of supply	% recycled or secondary	Journey 1 type	Destination 1	Distance (km)	kg CO2 per t per km	Delivery journey type	Distance (km)	kg CO2 per t per km	Total material kg CO2 per tonne (delivered)	CO2 from process (kg/t)	Total CO2 for project (tonnes)	Tonnes primary material	Tonnes recycled / secondary material
Road recycling rural	20000	240	11040	100	Current road material	0	96.0%	100%								0.00	3.12	33.08	0	10598
					CEM 2	708	4.0%	30%	Road	Plant	120	0.055						714.60	0.00	315.57
Asphalt wearing course	20000	50	2300		Bitumen	280	5.0%	0%	Road	Site	120	0.06	Road	80	0.06	292.00	35.00	37.61	115	0
					Aggregate	3.8	88.0%	0%	Road	Site	30	0.06	Road	80	0.06	10.40	35.00	91.89	2024	0
					Recycled asphalt	4.9	2.0%	100%	Road	Site	25	0.06	Road	80	0.06	11.20	35.00	2.13	0	46
					Filler	1.5	5.0%	50%	Road	Site	15	0.06	Road	80	0.06	7.20	35.00	4.85	58	58

**13340**

**2506 10834**

**Total Carbon Footprint for Project (tonnes) 485**  
**% recycled material 81%**  
**Total CO2 per tonne (kgs) 36.4**

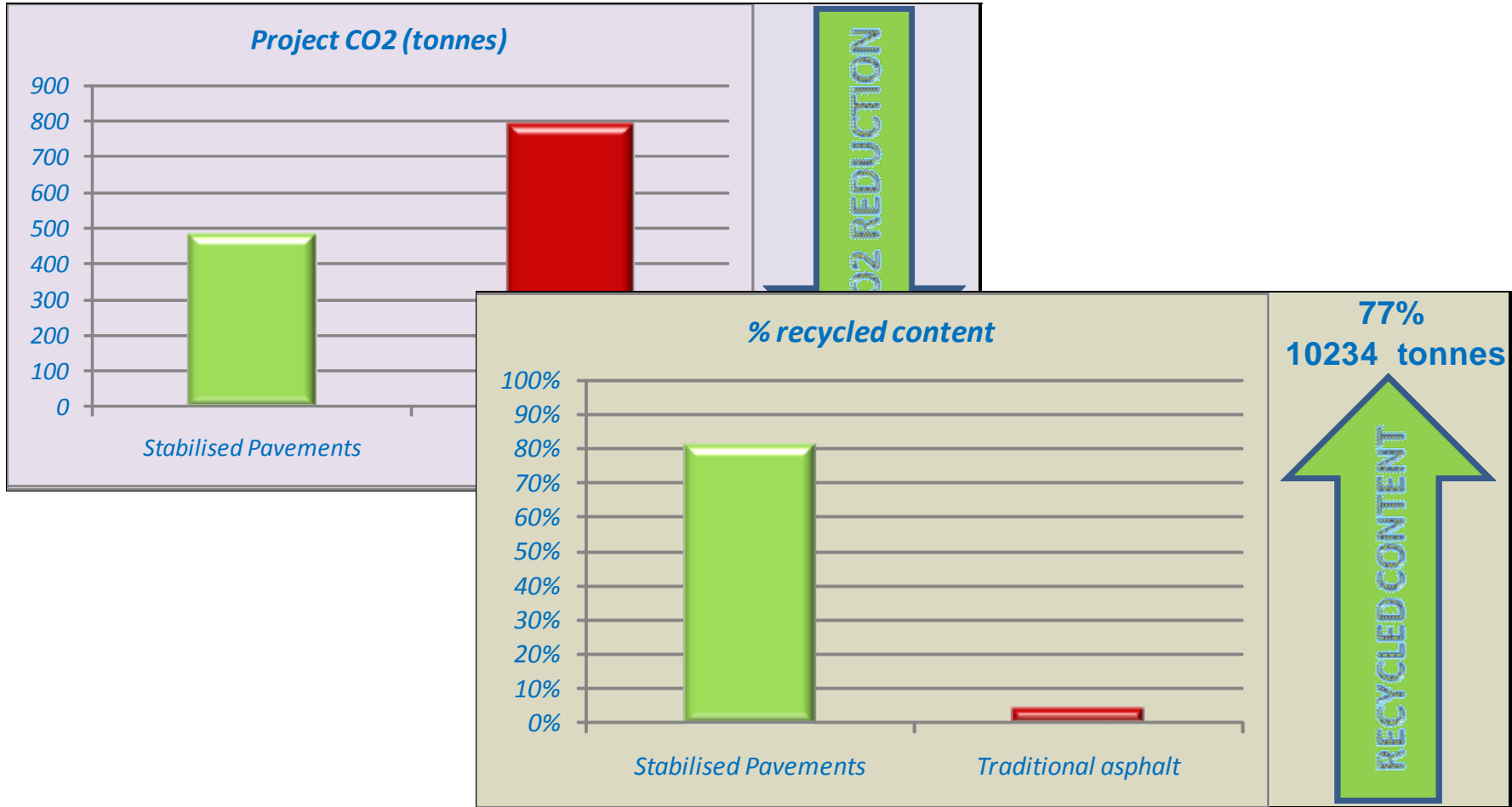
Standard asphalt	20000	290	13340		Bitumen	280	5.0%	0%	Road	Site	120	0.06	Road	80	0.06	292.00	35.00	218.11	667	0
					Aggregate	3.8	88.0%	0%	Road	Site	30	0.06	Road	80	0.06	10.40	35.00	532.96	11739	0
					Recycled asphalt	4.9	2.0%	100%	Road	Site	25	0.06	Road	80	0.06	11.20	35.00	12.33	0	267
					Filler	1.5	5.0%	50%	Road	Site	15	0.06	Road	80	0.06	7.20	35.00	28.15	334	334

**13340**

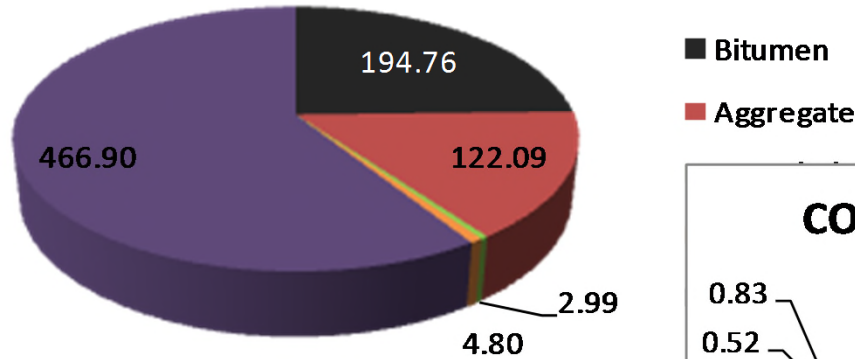
**12740 600**

**Total Carbon Footprint for Project (tonnes) 792**  
**% recycled material 5%**  
**Total CO2 per tonne (kgs) 59.3**

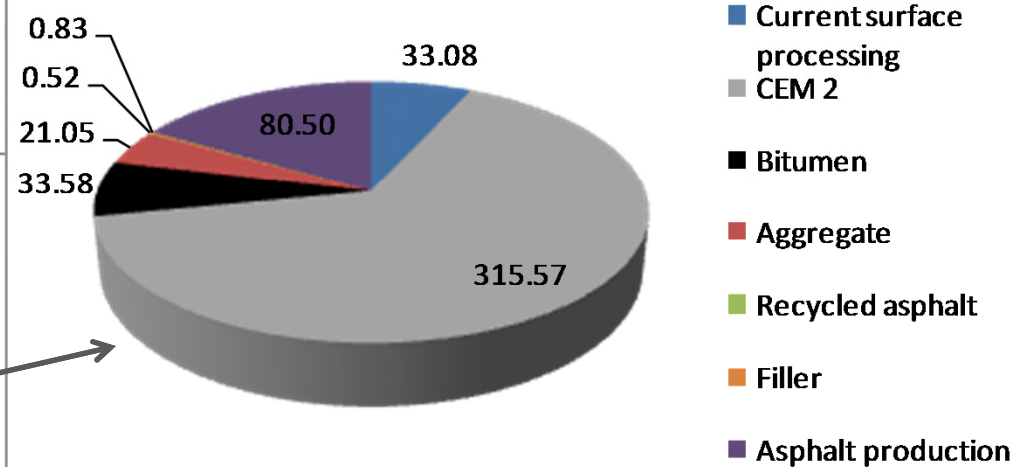
<b>CO2 reduction over standard asphalt construction</b>	<b>306 tonnes</b>
<b>Increase in recycled content over standard construction</b>	<b>77%</b>
<b>CO2 per tonne reduction over standard asphalt construction</b>	<b>23.0 kgs</b>
<b>CO2 reduction per tonne</b>	<b>39%</b>
<b>Increased recycled tonnes used</b>	<b>10234</b>



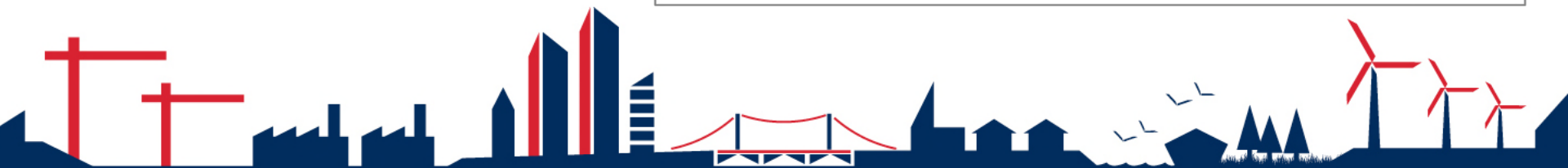
## CO2 Breakdown for traditional asphalt (tonnes)



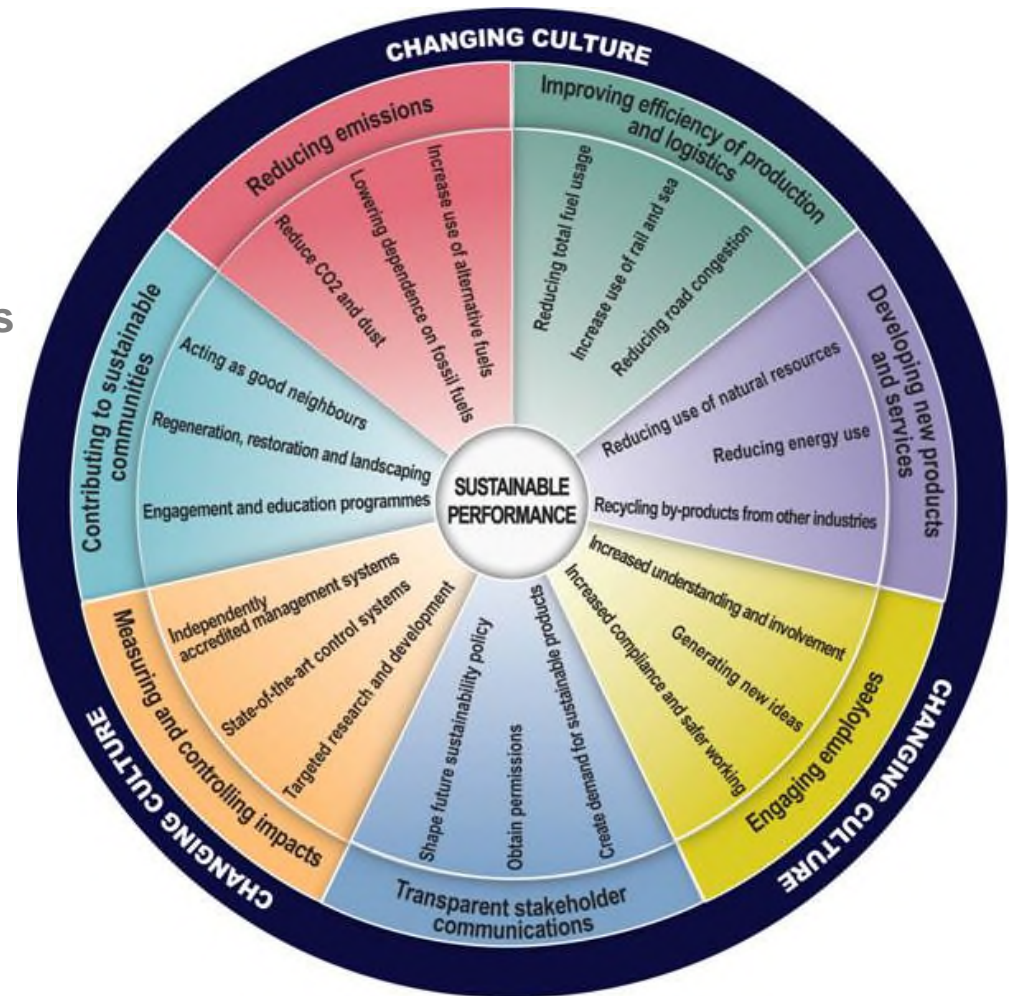
## CO2 Breakdown for road recycling (tonnes)



*What can we do to improve the CEM2 impact?*



- Leading UK industry investment in alternative fuels
- Offering quality controlled, factory blended cements
- Alternative (non primary) raw materials
- Alternative transport (rail)
- More efficient logistics fleet investment
- ‘Safe and efficient’ driver training
- Energy reduction programmes and investments
- EPOD paperless and efficient delivery system





*Using tyres saves adding iron-oxide to cement. Each year 40 million tyres are scrapped in the UK.*



*Climafuel is non recyclable waste that has been sorted and dried, approx 60-70% biomass.*



*Secondary Liquid Fuel (SLF) is made from industrial liquid wastes that can't be recycled.*

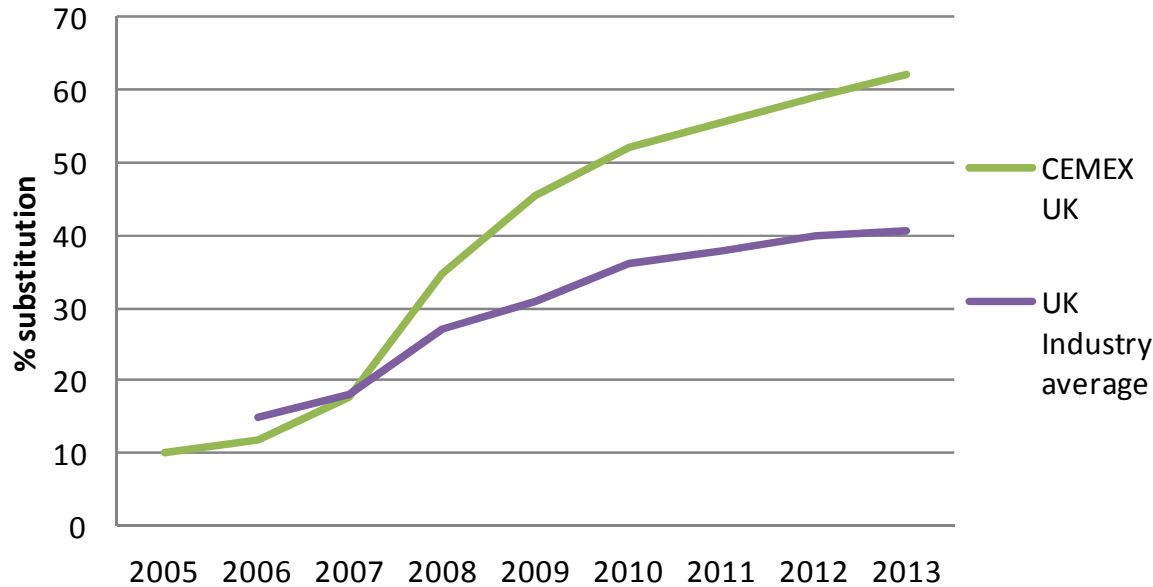
***Our cement business uses nearly 200 times more waste and by products than it sends to landfill!***

## CEMEX UK

- has invested around £35m on equipment, trials and securing permits for alternative fuel use and environmental improvements since 2006*
- is saving over 200,000 tonnes CO2 in 2013 compared to traditional fossil fuels*
- has used enough climafuel to reduce landfill by over 250,000 tonnes in 2013*
- has reduced CO2 per tonne cement by 10% over recent years*



## UK Cement Alternative Fuels



**Ultimate target to get to 100%; but working towards 80% in coming years**

- *Significant progress since 2005 on all alternative fuels – 62% in 2013*
- *UK Industry average est 40.5% (2013)*
- *Climafuel is a particular success story and has contributed significantly towards our 10% reduction in CO<sub>2</sub>*
- *NO<sub>x</sub> and SO<sub>x</sub> emissions also reduced – high temperatures (1400°C) and long residence time*
- *Reduced fossil fuel consumption and landfill*

- These are important certifications:
  - deliver confidence in us as a supplier
  - improve our own performance
  - meet client needs in the sustainable marketplace
  
- All CEMEX cements in the UK are certified to ISO14001, BES6001 responsible sourcing standard to 'Very Good'
  
- Both ISO14001 and BES6001 can allow greater credits under various green building and infrastructure works



## Certificate of Conformity



### Responsible Sourcing of Construction Products

Construction Products Certification certifies that

#### Cement

produced and supplied by

#### CEMEX UK Cement Ltd

CEMEX House, Coldharbour Lane, Thorpe, Egham, Surrey TW20 8TD

from its production plants throughout the UK conforms to the following standard:

**BES 6001 – Framework Standard for the Responsible Sourcing of Construction Products**

with a Performance Rating of

**Very Good**



Certificate No: CPRS 00008 – Issue No 2

Richard Hall  
Certification Manager

Date Authorised: 1 January 2013  
Date of first certification: 17 March 2010

**THIS CERTIFICATE IS VALID FROM 1 JANUARY 2013 TO 31 DECEMBER 2015**

subject to continued compliance with the above standard as confirmed by routine surveillance. Confirmation of the current validity status of Certification may be obtained by enquiry to the CPC Central Records Office or by reference to BRE's Green Book Live website: [www.greenbooklive.com](http://www.greenbooklive.com)

*This Responsible Sourcing certification has been carried out under licence using BRE's Responsible Sourcing scheme methodology, scheme documentation and underpinning processes*

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## Summary

- We need to balance the needs of the built environment with the Natural Environment
- We are committed to improvement and innovation – the SPL partnership is an example
- Our actions to reduce CO<sub>2</sub> are increasing
- Our products and partnerships will contribute towards a more sustainable, lower carbon and more climate resilient built environment

## The future:

- Major steps in alternative fuel use and associated reduced CO<sub>2</sub> - signed up to 'MPA Cement 2050 Roadmap'
- Reduced waste generation, water and energy use
- Increased partnership working to find whole supply chain solutions
- Innovations such as Carbon Capture & Storage technology will advance and may become viable

