READ ME

This text describes the data presented in the paper: <insert paper title>

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Introductory information

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Files included in the data deposit (include a short description of what data are contained):

1) Aggregates for concrete

2) Aggregates\_National Statistics

3) CD & E Flows

4) CD & E Flows\_Only hard group

5) CDE waste generation estimate, England 2008-2010

6) Cement minerals\_minerals year book

7) Clinker, cement and aggregates\_MPA data

8) Summary of estimated arising and use of recycled construction and demolition waste as aggregate

Explain the relationship between multiple data sets, if required:

The data presented here are calculated for use in material flow analysis. First, the raw material inputs for cement manufacture are calculated for both the UK and Thailand, based on the stoichiometry of the calcining reaction. Secondly, inputs required to make concrete are included in the calculations. Finally, quantities of concrete stocks in housing and other construction types are calculated. The starting figures for these calculations come from recorded data of total clinker produced in Great Britain and Thailand. The raw materials used for clinker production are limestone (approximately 75%), or related minerals such as marble and chalk, and shale (mudstone; approximately 25%) or other minerals such as clay and marl; in some cases cementstone (a natural mixture of limestone and mudstone) is used. The manufacturing processes involve inputs of fuels and other minor raw material components, and outputs of cement kiln dust (CKD), fuel ash and CO2 emissions derived from (1) the main raw materials in the calcination reactions (around 44% and 10% from limestone and shale respectively) and (2) combustion of conventional and alternative fuels. The produced clinker is divided into domestic clinker and import/export clinker. Based on data for domestic production of finished clinker in both countries, the estimated volume of the main raw materials together with CKD is calculated according to the calcining reactions of clinker manufacturing processes.

Key words used to describe the data:

Cement; concrete; material flow analysis (MFA); construction and demolition waste (C&D waste); recycled aggregates;

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Methodological information

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A brief method description � what the data is, how and why it was collected or created, and how it was processed:

Our approach involves three steps (Figure 1): (1) calculation of comparable data for inputs, based on the technical requirements for raw materials used to manufacture cement and concrete (Manning; et al., 2019), (2) material flow analysis to determine the amounts of raw material use and waste generation, and (3) assessment of regulatory factors and implications that arise from the material flow analysis. Summaries of material flows for concrete-based construction for 2012 in Great Britain and Thailand are given in Figures 3 and 4 respectively. Using these diagrams, the contribution to material flow at every step is clearly identified

Instruments, hardware and software used:

Excel Spreadsheet

Date(s) of data collection:

1990-2012

Geographic coverage of data:

Great Britain and Thailand

Data validation (how was the data checked, proofed and cleaned):

Online validation and checks by industry and business association

Overview of secondary data, if used:

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Data-specific information

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Definitions of names, labels, acronyms or specialist terminology uses for variables, records and their values:

Explanation of weighting and grossing variables:

Outline any missing data:

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Contact

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Please contact rdm@ncl.ac.uk for further information