Environmental Product Declaration

Ready-Mix Concrete

(per ISO 14025 and EN 15804)

Nevada Ready Mix
151 Cassia Way
Henderson, Nevada 89014
www.nevadareadymix.com

Founded in 1959, NRM has been the supplier of choice for over 90% of the Hotel/Casino projects on the Las Vegas Strip, Downtown, and throughout the Valley. NRM is the only fully vertically integrated concrete supplier in the Las Vegas Market. Our parent company, Mitsubishi Cement, supplies 100% of our cement, and we mine and utilize 100% of our own concrete aggregate. Today, the NRM team has supplied over 40 Million cubic yards of concrete under the management of the same individuals. Consistent in-house control of all ingredients combined with consistent and experienced management, place NRM as the unchallenged leader. We are currently approved by Clark County IQAC, NDOT, NRMCA, CCRL and AMRL.

Authors of the Life Cycle Assessment:

A. Grosse-Sommer and D. Green BASF
## EPD Information

<table>
<thead>
<tr>
<th>Program Operator</th>
<th>NSF International</th>
</tr>
</thead>
<tbody>
<tr>
<td>Declaration Holder</td>
<td>Nevada Ready Mix</td>
</tr>
</tbody>
</table>

- **Product:** 4512F
- **Date of Issue:** January 30, 2019
- **Period of Validity:** 5 Years
- **Declaration Number:** EPD10160

This EPD was independently verified by NSF International in accordance with ISO 14025, ISO 21930 and EN 15804:

- **Internal:**
- **External:**

<table>
<thead>
<tr>
<th>Signature</th>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jenny Oorbeck</td>
<td><a href="mailto:joorbeck@nsf.org">joorbeck@nsf.org</a></td>
</tr>
</tbody>
</table>

This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jack Geibig</td>
<td><a href="mailto:jgeibig@ecoform.com">jgeibig@ecoform.com</a></td>
</tr>
</tbody>
</table>

## LCA Information

- **Basis LCA:** Life Cycle Assessment Manager for Concrete Environmental Product Declaration June 2017

- **LCA Preparers:**
  - David Green/Anahi Grosse-Sommer
    - BASF Corporation/BASF SE
    - david.r.green@basf.com
    - anahi.grosse-sommer@basf.com

This life cycle assessment was critically reviewed in accordance with ISO 14044 by:

<table>
<thead>
<tr>
<th>Signature</th>
<th>Name</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jack Geibig - Ecoform</td>
<td><a href="mailto:jgeibig@ecoform.com">jgeibig@ecoform.com</a></td>
</tr>
</tbody>
</table>
### North America PCR Information

<table>
<thead>
<tr>
<th>Program Operator</th>
<th>Carbon Leadership Forum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference PCR</td>
<td>North American Product Category Rules (PCR) for ISO 14025 Type III Environmental Product Declarations (EPDs) version 1.1</td>
</tr>
<tr>
<td>Date of Issue</td>
<td>November 30, 2012, Revised December 4, 2013</td>
</tr>
<tr>
<td>PCR review was conducted by</td>
<td>Nick Santero PE International</td>
</tr>
</tbody>
</table>

### IBU PCR Information

<table>
<thead>
<tr>
<th>Program Operator</th>
<th>IBU - Institut Bauen und Umwelt e.V. Panoramastr. 1, 10178 Berlin Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reference PCR</td>
<td>Concrete components made of in-situ or ready-mixed concrete, version 1.5</td>
</tr>
<tr>
<td>Date of Issue</td>
<td>April 10, 2017</td>
</tr>
<tr>
<td>PCR review was conducted by</td>
<td>Institut Bauen und Umwelt <a href="http://www.ibu-epd.de">www.ibu-epd.de</a></td>
</tr>
</tbody>
</table>
ENVIRONMENTAL PRODUCT DECLARATION: DETAILED VERSION

Product Scope

This declaration and its LCA study are relevant to concrete and concrete products manufactured by Nevada Ready Mix in Henderson, Nevada. As the owner of the declaration, Nevada Ready Mix shall be liable for the underlying information and evidence; the program operator shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Product Description

Products covered by this Environmental Product Declaration (EPD) are for specific concrete applications for commercial and/or residential construction developed and produced by Nevada Ready Mix for markets in the Las Vegas metropolitan area. The design compressive strength is 31 MPA (4500 psi) at 28 days with a 2.5 – 10.2 cm (1 - 4 in) slump.

Concrete is batched and delivered in accordance with local standards. The producer provides product that meets or exceeds the standards based on standard operating procedures. Warranties and additional information are determined by the producer's terms and conditions.

During normal use, hardened concrete is stable and inert and does not pose a significant health or environmental hazard.

Fresh, plastic concrete must be managed in accordance with local regulations. Hardened concrete is an inert product and can be recycled subject to local regulations.

This EPD reports the impacts for the concrete components made of in-situ or ready-mixed concrete. The life cycle phases covered are A1 (Raw Material Supply: Upstream Processes), A2 (Transportation from Supplier to Gate of Producer) and A3 (Concrete Production Core Process). This EPD is based on a cradle-to-gate system boundary deemed appropriate as concrete mixtures are supplied to a variety of products and the function of the final product is not specifically determined. Reference service life is not relevant due to the cradle-to-gate boundary conditions.

Life cycle stages that are not included in this EPD are A4 (Transportation to the Construction Site), A5 (Construction and Installation Process), B1-7 (Use Phase) and C1-4 (End of Life Stage).
**Technical Data** (*These characteristics are not relevant for ready-mix concrete*)

<table>
<thead>
<tr>
<th>Name</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>1,750 - 2,400</td>
<td>kg/m³</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>*</td>
<td>W/(mK)</td>
</tr>
<tr>
<td>Water vapor diffusion resistance factor</td>
<td>*</td>
<td>-</td>
</tr>
<tr>
<td>Sound absorption coefficient</td>
<td>*</td>
<td>%</td>
</tr>
<tr>
<td>Compressive strength</td>
<td>17 - 110</td>
<td>N/mm²</td>
</tr>
<tr>
<td>Tensile strength</td>
<td>*</td>
<td>N/mm²</td>
</tr>
<tr>
<td>Flexural strength</td>
<td>*</td>
<td>N/mm²</td>
</tr>
<tr>
<td>Modulus of elasticity</td>
<td>*</td>
<td>N/mm²</td>
</tr>
<tr>
<td>Equilibrium moisture content</td>
<td>*</td>
<td>%</td>
</tr>
</tbody>
</table>

**Product Components**

The ready-mix concrete and its upstream materials covered by this Environmental Product Declaration conform to the appropriate ASTM standards as described in the Carbon Leadership Forum PCR, UNSPSC code 30111500, CSI Specification Section 03 30 00 or the requirements of European standard EN 206:2013, BS 8500-1:2015 and BS 8500-2:2015 based on the IBU PCR. Ready-mix concrete is generally batched at a plant, centrally mixed and then discharged into a truck mixer for delivery (central mixed) or dry- batched into the truck for mixing in the production yard, in transit or at the job site (truck mixed). Ready-mix concrete does not require packaging. The base material ranges for the defined ready-mix concrete are:

<table>
<thead>
<tr>
<th>Material</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Binders</td>
<td>5 - 15 %</td>
</tr>
<tr>
<td>Sands</td>
<td>30 - 45 %</td>
</tr>
<tr>
<td>Aggregates</td>
<td>25 - 40 %</td>
</tr>
<tr>
<td>Admixtures</td>
<td>&lt; 1 %</td>
</tr>
<tr>
<td>Water</td>
<td>1 - 15 %</td>
</tr>
</tbody>
</table>

The product does not contain materials that are listed in the REACH “Candidate List of Substances of Very High Concern for Authorization”.

Environmental Product Declaration - Ready-mix Concrete 1/30/2019

EPD Program Operator  
NSF International  
789 N. Dixboro Road Ann Arbor, MI 48105  
www.nsf.org

Date of Issue: January 30, 2019  
Period of Validity: 5 years  
Declaration: EPD10160
Production

Health and safety measures with potential impact to human health during manufacturing are to be consistently adhered to per regional regulatory requirements. Initiatives must be undertaken to minimize or eliminate potential impacts to the environment based on the use of best practices including engineered controls. Fresh, plastic concrete must be managed in accordance with local regulations. Hardened concrete is an inert product and can be recycled subject to local regulations. If disposed under the European waste catalogue, the waste code 17-01-01 for non-hazardous concrete and 17-01-06 for concrete containing hazardous substances is applicable.

Declared Unit

The declared unit is 1 m³ of Nevada Ready Mix concrete produced for commercial applications with a specified compressive strength of 31 MPa (4500 psi) at 28 days, a design slump of 2.5 – 10.2 cm (1 - 4 in.) and a density of approximately 2400 kg/m³ (4050 lbs/yd³).

Cut-off Criteria

The cut-off criteria for raw material/energy consumption and environmental impacts for inclusion is less than 1% however for the Carbon Leadership Forum PCR all inputs and outputs for which data is available shall be included. The total of the estimated neglected input flows does not exceed 5% for the total impacts from energy, mass or climate change.

Life Cycle Assessment (LCA)

The LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

A summary of the life cycle stages included in the EPD are as follows:

I. Raw Material Supply (upstream processes): Extraction, handling and processing of the raw materials used in production of concrete: cement, supplementary cementitious materials, aggregate (coarse and fine), water, admixtures and other materials or chemicals used in concrete mixtures.

II. Transportation: Transportation of these materials from supplier to the 'gate' of the concrete producer.

III. Manufacturing (core processes): The core process results from the energy used to store, batch, mix and distribute the concrete and operate the facility (concrete plant).

IV. Water use in mixing and distributing concrete.
The processes excluded from the EPD are as follows:

I. Production, manufacture and construction of buildings, capital goods and infrastructure with an expected lifespan of over 5 years.

II. Production and manufacture of concrete production equipment, concrete delivery vehicles, earth-moving equipment and laboratory equipment with an expected lifespan of over 5 years.

III. Personnel-related activities (travel, furniture, office supplies) as well as energy and water use related to company management and sales activities.

A summary of the limitations of this EPD include:

This EPD does not report all environmental impacts due to manufacturing of the product, but rather reports the environmental impacts for those categories with established life cycle assessment-based methods to track and report. Unreported environmental impacts include (but are not limited to) factors attributable to human health, land use change and habitat destruction.

This EPD reports the results of an LCA for 'cradle to gate' analysis. Thus, declarations themselves are not comparative assertions, defined as an environmental claim regarding the superiority or equivalence of one product versus a competing product that performs the same function. An EPD does not make any statements that the product covered by the EPD is better or worse than any other product.

To assess the local impacts of product manufacturing, additional analysis is required.

Life cycle impact assessment results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Comparability:
EPD of concrete mixtures may not be comparable if they do not comply with this standard and data from this EPD. While an EPD can be used to compare concrete mixtures, the data cannot be used to compare between construction products or concrete mixtures used in different concrete products unless the data is integrated into a comprehensive LCA. For example, precast concrete, concrete masonry units and site cast concrete all have different manufacturing processes whose impacts are attributed to different LCA stages. This precludes direct comparison between mixtures used in these different products unless all life cycle phases are included.

Allocation:
During the production of ready-mix concrete, co-products are not introduced into the mixture designs. Source-specific allocations are assigned to supplementary cementitious materials as these are considered secondary materials rather than co-products. For these secondary materials, all processing and transportation required to transform these materials to SCMs are included.
LCA: Interpretation and Results

The following tables provide the environmental impacts for one (1) cubic meter of ready-mix concrete. The first table shows the environmental impacts expressed in each of the designated categories based on the CML method and the IBU PCR. The second table shows the environmental impacts based on the TRACI v2.1 characterization factors and CLF PCR.

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m³ READY-MIX CONCRETE - CML 2001

<table>
<thead>
<tr>
<th></th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global warming potential</td>
<td>3.07E-02</td>
<td>5.63E+00</td>
<td>6.77E+00</td>
</tr>
<tr>
<td>Ozone Depletion Potential</td>
<td>8.46E-07</td>
<td>2.34E-13</td>
<td>5.52E-12</td>
</tr>
<tr>
<td>Acidification potential</td>
<td>1.72E-00</td>
<td>1.31E-02</td>
<td>2.41E-02</td>
</tr>
<tr>
<td>Eutrophication potential</td>
<td>1.04E-01</td>
<td>3.14E-03</td>
<td>2.57E-03</td>
</tr>
<tr>
<td>Photochemical Ozone Creation Potential</td>
<td>1.03E-01</td>
<td>4.31E-03</td>
<td>3.07E-03</td>
</tr>
<tr>
<td>Abiotic depletion potential for non-fossil resources (ADPE)</td>
<td>9.23E-07</td>
<td>4.06E-07</td>
<td>5.02E-06</td>
</tr>
<tr>
<td>Abiotic depletion potential for fossil resources (ADPF) (MJ)</td>
<td>1.35E-03</td>
<td>7.97E-01</td>
<td>3.83E-02</td>
</tr>
<tr>
<td>Renewable primary energy as energy carrier (PERE) (MJ)</td>
<td>7.75E-00</td>
<td>4.03E-00</td>
<td>1.55E-01</td>
</tr>
<tr>
<td>Total use of renewable primary energy resources (PERT) (MJ)</td>
<td>7.75E-00</td>
<td>4.03E-00</td>
<td>1.55E-01</td>
</tr>
<tr>
<td>Non-renewable primary energy as energy carrier (PENRE) (MJ)</td>
<td>1.43E+03</td>
<td>7.71E+00</td>
<td>3.97E+02</td>
</tr>
<tr>
<td>Total use of non-renewable primary energy resources (PENRT) (MJ)</td>
<td>1.43E+03</td>
<td>7.71E+00</td>
<td>3.97E+02</td>
</tr>
<tr>
<td>Use of renewable secondary fuels (MJ)</td>
<td>1.47E-22</td>
<td>3.80E-28</td>
<td>2.35E-28</td>
</tr>
<tr>
<td>Use of non-renewable secondary fuels (MJ)</td>
<td>1.73E-21</td>
<td>5.77E-27</td>
<td>3.75E-27</td>
</tr>
<tr>
<td>Use of net fresh water (FW) [m³]</td>
<td>3.20E-01</td>
<td>7.41E-03</td>
<td>6.10E-02</td>
</tr>
<tr>
<td>Hazardous waste disposed (HWD) [kg]</td>
<td>5.58E-07</td>
<td>4.07E-06</td>
<td>2.68E-06</td>
</tr>
<tr>
<td>Non-hazardous waste disposed (NHWD) [kg]</td>
<td>4.50E-01</td>
<td>6.19E-03</td>
<td>3.09E-02</td>
</tr>
<tr>
<td>Radioactive waste disposed (RWD) [kg]</td>
<td>1.90E-03</td>
<td>1.61E-04</td>
<td>5.48E-03</td>
</tr>
</tbody>
</table>

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT: 1 m³ READY-MIX CONCRETE - TRACI v2.1

<table>
<thead>
<tr>
<th></th>
<th>A1</th>
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<th>A3</th>
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</thead>
<tbody>
<tr>
<td>Global warming potential</td>
<td>3.07E-02</td>
<td>5.63E+00</td>
<td>6.77E+00</td>
</tr>
<tr>
<td>Ozone Depletion Potential</td>
<td>1.38E-06</td>
<td>2.34E-13</td>
<td>5.52E-12</td>
</tr>
<tr>
<td>Acidification potential</td>
<td>1.69E-00</td>
<td>1.71E-02</td>
<td>2.46E-02</td>
</tr>
<tr>
<td>Eutrophication potential</td>
<td>3.87E-02</td>
<td>1.88E-03</td>
<td>3.34E-03</td>
</tr>
<tr>
<td>Formation potential of tropospheric ozone photochemical oxidants [kg O3 eq.]</td>
<td>1.99E+01</td>
<td>3.63E-01</td>
<td>2.37E-01</td>
</tr>
</tbody>
</table>

ADDITIONAL LIFE CYCLE INVENTORY DATA RESULTS per 1m³ READY-MIX CONCRETE

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete batching water</td>
<td>0.132</td>
</tr>
<tr>
<td>Concrete washing water</td>
<td>0.01</td>
</tr>
</tbody>
</table>
For the specific system boundaries identified for this EPD, the raw material supply (phase A1) is the primary driver for all environmental impact categories with this phase accounting for over 80% of the total results for GWP, ODP, AP, EP and POCP.

This is generally the result of the cement content in the concrete mixture as cement production requires high levels of energy for the calcining process while at the same time emitting CO$_2$ as part of the reaction from converting limestone (CaCO$_3$) to lime (CaO). Transportation may have a larger percentage of the total impact when raw materials are transported from long distances such as trans-oceanic locations.

**Data Quality and Variability**

The requirements for data quality and background data correspond with the requirements of the IBU PCR part A, Carbon Leadership PCR for Concrete or other Product Category Rules publicly available and identified in the EPD Information section of this declaration. The calculated data in this report is based on actual ready-mix concrete compositions with data collected for review in 2018.

The time over which inputs to and outputs from the system are accounted for is 100 years from the year for which the data is deemed representative.

The technology coverage reflects the physical reality for the declared ready-mix concrete product.

Used datasets are complete according to the system boundary within the limits set by the criteria for the exclusion of inputs and outputs.

To calculate the life cycle of the declared ready-mix concrete products, the software solution GaBi ts 8.5 from thinkstep AG was used. Background datasets were extracted from the GaBi database. The last revision of the GaBi data is less than 3 years ago according to thinkstep AG. Altogether, the data quality is considered high.

This EPD was created using industry average data for upstream materials. Variation can result from differences in supplier locations, manufacturing processes, manufacturing efficiency and fuel type.

The following table summarizes the overall quality assessments for the main inputs for ready-mix concrete.

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Data Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Binders</strong></td>
<td>Technology</td>
</tr>
<tr>
<td>Cement (CEM I)</td>
<td>good</td>
</tr>
<tr>
<td>Portland cement</td>
<td>good</td>
</tr>
<tr>
<td>Fly ash</td>
<td>good</td>
</tr>
<tr>
<td>Blast furnace slag</td>
<td>good</td>
</tr>
<tr>
<td>Granite</td>
<td>good</td>
</tr>
<tr>
<td>Limestone</td>
<td>good</td>
</tr>
<tr>
<td>Glass</td>
<td>good</td>
</tr>
<tr>
<td>Natural pozzolan</td>
<td>good</td>
</tr>
<tr>
<td>Lime</td>
<td>good</td>
</tr>
<tr>
<td>Kaolin</td>
<td>good</td>
</tr>
<tr>
<td>Silica fume</td>
<td>good</td>
</tr>
<tr>
<td>Titanium dioxide</td>
<td>good</td>
</tr>
</tbody>
</table>
### Iron oxide
- Quality: good
- Year: 2018
- Region: Germany
- Country: good
- Source: Gabi 8.5

### Rice husk ash
- Quality: fair
- Year: 2017
- Region: US
- Country: fair
- Source: Gabi 8.5

### Sands
- **Natural sand**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **Natural sand, washed**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **Manufactured sand**
  - Quality: good
  - Year: 2016
  - Region: China
  - Country: good
  - Source: Gabi 8.5
- **Limestone powder**
  - Quality: good
  - Year: 2017
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **River dredge sand**
  - Quality: fair
  - Year: 2016
  - Region: Global
  - Country: fair
  - Source: Gabi 8.5

### Aggregates
- **Natural aggregate**
  - Quality: good
  - Year: 2016
  - Region: China
  - Country: good
  - Source: Gabi 8.5
- **Recycled aggregate**
  - Quality: good
  - Year: 2016
  - Region: US
  - Country: good
  - Source: Gabi 8.5
- **Recycled glass**
  - Quality: fair
  - Year: 2016
  - Region: Europe
  - Country: fair
  - Source: Gabi 8.5
- **Lightweight aggregate/expanded clay**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **Recycled concrete**
  - Quality: good
  - Year: 2016
  - Region: US
  - Country: good
  - Source: Gabi 8.5
- **Recycled tires**
  - Quality: fair
  - Year: 2018
  - Region: US
  - Country: fair
  - Source: Gabi 8.5
- **Limestone**
  - Quality: good
  - Year: 2017
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5

### Admixtures
- **MasterPozzolith 322 N**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterPozzolith 210**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterPolyheed N**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterPolyheed 997**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterRheobuild**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterGlenium**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterSet AC 534**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterPozzolith 122HE**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **Master X-Seed 100**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterSet R 300**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterSet DELVO**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterLife 300D**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterMatrix VMA 358**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterLife SRA 035**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterLife AMA 100**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterAir AE 90**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterSure Z 60**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterColor**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterKure ER 50**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF
- **MasterLife CI 30**
  - Quality: good
  - Year: 2018
  - Region: US/Europe
  - Country: good
  - Source: Gabi 8.5/BASF

### Water
- **Water**
  - Quality: good
  - Year: 2018
  - Region: US/Germany
  - Country: good
  - Source: Gabi 8.5
- **Desalinated water**
  - Quality: fair
  - Year: 2018
  - Region: Middle East
  - Country: fair
  - Source: Gabi 8.5

### Reinforcement
- **Steel sections**
  - Quality: good
  - Year: 2016
  - Region: Global
  - Country: good
  - Source: Gabi 8.5
- **Reinforced steel**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **Polypropylene**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **MasterFiber MAC 2200 CB**
  - Quality: good
  - Year: 2018
  - Region: US
  - Country: good
  - Source: Gabi 8.5
- **Recycled PET**
  - Quality: fair
  - Year: 2016
  - Region: Europe
  - Country: fair
  - Source: Gabi 8.5
- **Recycled PP**
  - Quality: fair
  - Year: 2016
  - Region: Europe
  - Country: fair
  - Source: Gabi 8.5

### Energy
- **US Electricity grid mix**
  - Quality: good
  - Year: 2016
  - Region: US
  - Country: good
  - Source: Gabi 8.5
- **EU-27 Electricity grid mix**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **US Natural gas**
  - Quality: good
  - Year: 2016
  - Region: US
  - Country: good
  - Source: Gabi 8.5
- **EU-27 Natural gas**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5

### Packaging
- **Pallet**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: good
  - Source: Gabi 8.5
- **Steel**
  - Quality: good
  - Year: 2016
  - Region: Global
  - Country: fair
  - Source: Gabi 8.5
- **Plastic**
  - Quality: good
  - Year: 2016
  - Region: Europe
  - Country: fair
  - Source: Gabi 8.5
EPD Program Operator
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Period of Validity: 5 years
Declaration: EPD10160

<table>
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<tr>
<th>Transport</th>
<th>Year</th>
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<th>Software</th>
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<tr>
<td>Truck</td>
<td>2016</td>
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<td>good</td>
<td>Gabi 8.5</td>
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<td>Train</td>
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<td>Ship - oceanic</td>
<td>2016</td>
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<td>Gabi 8.5</td>
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</tbody>
</table>

Ratings: good, fair, poor

References


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BS 8500-1:2015, Concrete - Complementary British Standards to BS EN 206. Method of specifying and guidance for the specifier.


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DIN EN ISO 14025:2011: Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

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UNSPSC Code 30111500 Concrete and Mortars