

Life Cycle Assessment (LCA)

Torun 2.85m



Product information

The barrier is connected without loose parts and does not need to be anchored in the ground. One of Torun’s most impressive features is its ability to link barriers seamlessly without any human touch or extra parts, saving both time and resources. It is meticulously crafted and tested to ensure compliance with regulations, specifically addressing pedestrian and bicyclist safety.

Table 1: Content declaration of **Torun 2.85 m**.

Product components	Weight (kg)
Steel S235	119
Steel S355	22
Steel C9D	2.4
Reinforcing steel HRB 45	15
Zinc coating	11
Aluminum 6063	2
Concrete C30	396
Rubber	4
Total	571.4

LCA information

Declared unit: 1 piece of Torun 2.85 m.

Reference service life: 30 years.

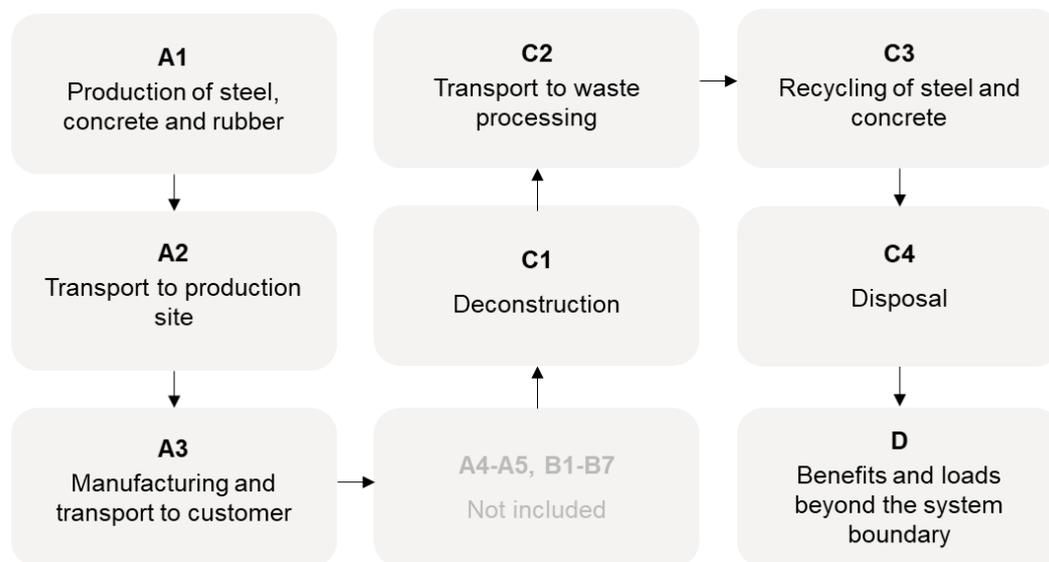
Geographical scope: Global raw material supply and Swedish sales.

Database and LCA software used: Ecoinvent v3 and SimaPro.

System boundaries

Description of system boundaries: The choice of system boundaries is based on the obligatory modules for construction products according to EN 15804.

Figure 1: Visualization of the system boundaries.



Production stage (A1-A3)

This stage includes the extraction of raw materials and the production of steel, concrete and rubber (A1), transportation to the factory gate and internal transport (A2), manufacturing of products and transport to customer (Ramuddens depots) (A3).

End-of-life stage (C1-C4)

At the end-of-life stage about 90% of the barriers are reused for other purposes. The remaining 10% are recycled which is presented in module C3. This stage also includes transportation of the discarded product to the recycling site and locations for reuse of the product (C2) and pre-treatment of concrete crushing before recycling.

Beyond the system boundary (D)

This stage includes the avoided production of barriers due to reuse. As there is no specific time limit for how long the barriers can be reused, an assumption was made that they can be reused as long as their technical life length. This was modelled for 90% of the products as that is the share assumed to be reused.

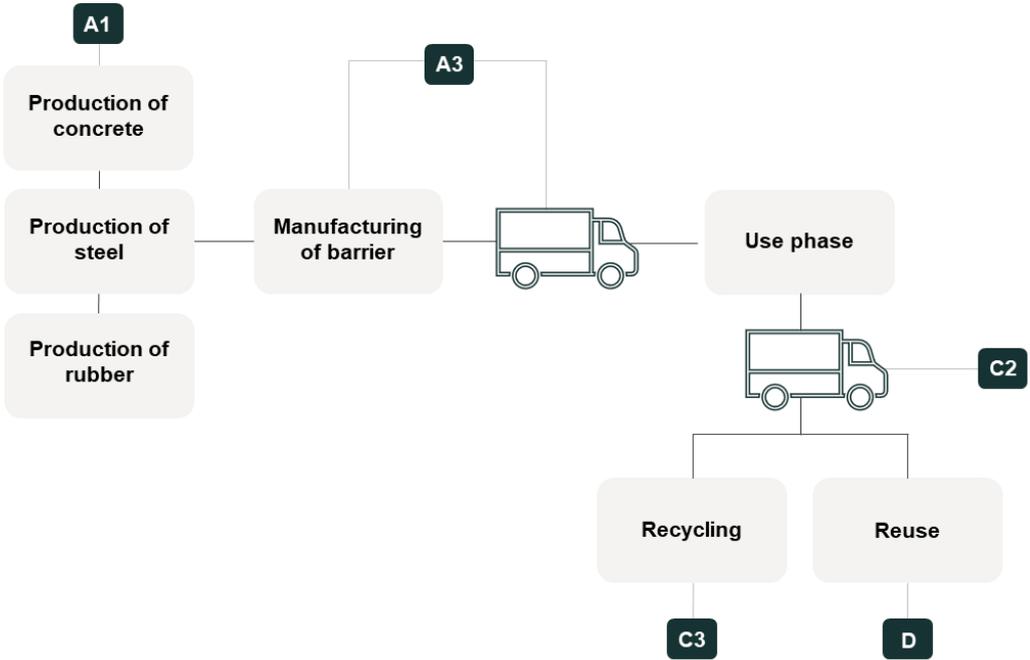
Main environmental impacts

Torun 2.85m

Figure 1: Global warming potential from 1 piece of Torun 2.85m.

Product stage			End-of-life stage				Beyond the system boundary
A1	A2	A3	C1	C2	C3	C4	D
3,98E+02	0,00E+00	8,43E+01	0,00E+00	8,86E+00	1,27E+00	0,00E+00	-2,17E+02
Cradle to gate 482 kg CO ₂ eq			10,13 kg CO ₂ eq				-217 kg CO ₂ eq
Cradle to grave 492,13 kg CO ₂ eq							-217 kg CO ₂ eq
Total global warming potential 275,13 kg CO ₂ eq							

Total Global Warming Potential 275 kg CO₂e



Total environmental impact

Torun 2.85 m

Table 3: Environmental impacts from Torun 2.85 m.

Indicator	Unit	A1-A3	C1	C2	C3	C4	D
Global warming potential – Fossil	kg CO2 eq	4,78E+02	0,00E+00	8,85E+00	1,26E+00	0,00E+00	-2,15E+02
Global warming potential - Biogenic	kg CO2 eq	3,25E+00	0,00E+00	4,74E-03	1,38E-04	0,00E+00	-1,46E+00
Global warming potential - Land use and LU change	kg CO2 eq	2,38E-01	0,00E+00	3,14E-03	1,10E-04	0,00E+00	-1,07E-01
Global warming potential - Total	kg CO2 eq	4,82E+02	0,00E+00	8,86E+00	1,27E+00	0,00E+00	-2,17E+02
Ozone depletion potential	kg CFC11 eq	4,84E-06	0,00E+00	1,85E-07	1,94E-08	0,00E+00	-2,18E-06
Acidification potential	mol H+ eq	4,96E+00	0,00E+00	2,09E-02	1,14E-02	0,00E+00	-2,23E+00
Eutrophication potential - Freshwater	kg P eq	1,82E-01	0,00E+00	6,23E-04	3,69E-05	0,00E+00	-8,19E-02
Eutrophication potential - Marine	kg N eq	4,95E-01	0,00E+00	5,49E-03	5,29E-03	0,00E+00	-2,23E-01
Eutrophication potential - Terrestrial	mol N eq	1,89E+01	0,00E+00	5,93E-02	5,80E-02	0,00E+00	-8,51E+00
Photochemical ozone formation	kg NMVOC eq	1,62E+00	0,00E+00	3,63E-02	1,73E-02	0,00E+00	-7,28E-01
Abiotic depletion potential - Minerals and metals	kg Sb eq	1,13E-02	0,00E+00	2,47E-05	4,51E-07	0,00E+00	-5,09E-03
Abiotic depletion potential - Fossil fuels	MJ	5,37E+03	0,00E+00	1,33E+02	1,65E+01	0,00E+00	-2,42E+03
Water deprivation potential	m3 depriv.	7,46E+01	0,00E+00	6,33E-01	3,58E-02	0,00E+00	-3,36E+01

“E” means exponent (10^x). For example, 4,78E+02 means 4,78*10² and can be read as 478.