Comparison of the global warming potential ISOLENA

Using 1t of ISOLENA 100% sheep wool saves more than 1.6t CO_2 compared to conventional insulation materials.

The comparison of insulation materials should not be made on the level of 1kg but on the level of the same functional unit (FE). Therefore the amount of material needed to achieved a certain insulation effect is taken into account. For example, the data for insulation materials is normalized to the same thermal resistance of $1 m^2 K / W$. $KF [kg] = \rho[kg / m^3] * \lambda[W / mK] * R0 [w^2 K / W] * A0 [w^2]$ with $R0 = 1 m^2 K / W$ and $A0 = 1 [m^2]$.

Ecological parameters	Natureplus balance 100% sheep wool ISOLENA 18kg / m^3, 0.038 W / (mK)		Benchmark value from baubook glass wool 18kg / m^3, 0.038 W / (mK)		Benchmark value from baubook stone wool 28kg / m^3, 0.044 W / (mK)	
	per KG	**per FE**	**per KG**	**per FE**	**per KG**	**per FE**
GWP total [CO_2 eq.] (including CO_2 storage)	0.83	0.57	2.45	1.68	1.93	2.38
House with 60m^3 insulation: 1t sheep wool ≙ 1t glass wool ≙ 1.59t stone wool	830kg CO_2		2.450kg CO_2		3,069kg CO_2	
CO_2 savings when using sheep wool				1.62t		2.24t

Source: Natureplus LCA as part of Isolena 2016 product testing, ecoinvent 2.2 database