

EXPANDED POLYSTYRENE (EPS)

THE ENVIRONMENTAL TRUTH

CARBON FOOTPRINT

EPS used as thermal insulation for buildings will save 400 times as much energy as that required to manufacture the base product

- 72 000 litres of oil – energy costs saved over the 50 year life of the building
- 180 litres of oil – energy cost to manufacture EPS
- Based on study in Germany of a 120m² family residence where walls and roof space are insulated with 100mm thick EPS

GREENHOUSE GASES

EPS contains no CFC's or HCFC's. Insignificant amounts of carbon monoxide and styrene monomer are given off when EPS is burnt. Pentane is non-toxic and constitutes no threat to the ozone layer.

LIFE CYCLE ASSESSMENT (LCA) - cradle to grave

The LCA presents a complete picture of EPS which supports its inherent benefits regarding the environmental impact for sustainable building and development.

ENVIROMENTAL EFFECT/ASPECT	ABB.	CHARACTERISATION SCORES	UNIT	NORMALISATION SCORES
ENVIRONMENTAL EFFECT				
Abiotic depletion	APD	0,83	-	1,04E-11
Global warming	GWP	5,98	kg	1,42E-12
Ozone depletion	ODP	2,11E-06	kg	3,75E-14
Human toxicity	HCT	0,0357	kg	9,06E-13
Aquatic ecotoxicity	ECA	101	m ³	2,29E-13
Smog	POCP	0,0207	kg	3,28E-12
Acidification	AP	0,0278	kg	8,19E-13
Nutritification	NP	0,00241	kg	2,81E-13
Land use	LU*t	0,00274	m ² .yr	
ENVIRONMENTAL ASPECTS				
Cumulative energy demand (excl. feedstock energy)	CED-	48,9	MJ (lhv)*	8,45E-13
Cumulative energy demand (incl. feedstock energy)	CED+	93,1	MJ (lhv)*	1,61E-12
Not toxic final waste	W-NT	0,0453	kg	8,43E-14
Toxic final waste	W-T	0,0124	kg	3,09E-13

* lhv = lower heating value

The figures above show the weighted averages of the characterisation and normalisation scores for the life cycle of 1kg of EPS, for densities varying between 15-20 kg/m³

The study was carried in 1998 by PRC-Bouwcentrum, Netherlands in accordance ISO 14040.

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