

EPS has excellent eco-properties

Due to the low input of raw material (98 % air, 2 % polystyrene) and energy-efficient production process, EPS has an excellent eco-balance. An analysis of the current Environmental Product Declarations (EPD) with regard to the three values “Input of Non-Renewable Primary Energy”, “Global Warming Potential (GWP100)” and “Acidification Potential (AP)”, summarised in the $\Delta OI3$ -Index, clearly illustrates the advantages of EPS compared to the “ecological alternatives” mineral foam and wood fibre.

Insulation for ETICS	PED n.r. MJ ^{*)}	GWP100 kg CO ₂ - Äquiv. ^{*)}	AP kg SO ₂ - Äquiv. ^{*)}	$\Delta OI3$	EPD-No.
EPS grey	39,36	1,31	0,0030	1,93	ECO-EPS-00050101-1106
EPS white	47,34	1,56	0,0040	2,37	ECO-EPS-00010101-1106
Wood fibre	77,31	-0,72	0,0070	3,39	EPD-PTX-2010121-D
Mineral foam	63,72	5,74	0,0104	4,46	EPD-XEL-2009212-D
Bricks filled with MW	93,36	7,45	0,0245	7,62	EPD-POR-2011311-D
Mineral wool (MW)	77,40	6,96	0,0450	9,74	EPD-DRW-2008112-D

^{*)} per functional unit (= 1 m² area of equivalent insulation performance)

Source: Environmental Construction Products Organisation (ECO) and Institut Bauen und Umwelt e.V. (IBU)

- The $\Delta OI3$ Index uses a scale of 0 to 100, with the lower values being better than the higher ones.
- Attention: Mass-based eco-values (i.e. per kg) cannot be compared with one another, because they do not take into account the amount of air in an insulation material. While only 15 to 18 kg of polystyrene is needed to manufacture one cubic metre of façade EPS, the amount of material required for other types of façade insulation is up to 10 times higher. The bulk density of wood fibre baseboard for example is approximately 180 kg/m³. But even volumic eco-values (i.e. per m³) are not comparable because thermal conductivity also plays a role. For this reason, insulation materials must be compared with one another in functional units and bulk density and thermal conductivity must also be taken into account.