



Technical Data Sheet

September 2011

EXPANDED POLYSTYRENE – EPS

(As used for tapered insulation schemes)

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TECHNICAL DATA General Requirements to BS EN 13163

Property	Class	Declared
MATERIAL SPECIFICATION – EPS 150 E (Flame retardant additive grade)		
Thermal conductivity at 10°C W/(m.K)		0.034 W/(m.K)
Dimensional stability under constant normal laboratory conditions 23°C, 50% relative humidity	DS (N) 5	+/- 0.5%
Compressive strength or compressive strain @ 10% stain minimum		150 kPa
Compressive strength @ 1% nominal compression	BS 4370 PART1 Method 3	70 kPa
Bending strength		200 kPa
Water vapour permeability mg/ (Pa.h.m)		0.010 to 0.024
Reaction to fire	Euroclass	Euroclass E
Water absorption by diffusion		CASS WD (V) 10
Water absorption	EN 12088: 1997 WD (V) 10	<=10% V/V
Nominal density		23-25 Kg/m ³

AXTER EPS ODP & GWP STATEMENT



This Technical Bulletin has been produced to provide an explanation of the Environmental terms currently used within the industry thus providing answers to the increasingly asked questions regarding the environmental effects of EPS.

Ozone Depletion – ozone-depleting gases cause damage to the stratospheric ozone or the ‘ozone layer’ and there is uncertainty about the combined effects of different gases. Damage to the ozone layer reduces its ability to prevent ultraviolet (UV) light entering the earth’s atmosphere thus increasing the amount of harmful UVB light hitting the earth’s surface. CFCs, HCFCs and Halons are the major causes of ozone layer depletion.

Ozone Depletion Potential (ODP) is the potential of any gas to deplete the ozone layer.

Pentane (the blowing agent used in the manufacture of Expanded Polystyrene) has an ODP of zero.

Global Warming Potential (GWP) is a means of measuring the strength of different ‘greenhouse’ gases in the atmosphere and can be used to define the impact greenhouse gases will have on global warming over different periods of time.

As an example, CO₂ has a GWP of 1 over 100 years. All other greenhouse gases e.g. HFC, CFC, HCFC and Methane are measured relative to CO₂; their relative global warming effect after 100 years relative to the simultaneous emission of the same mass of CO₂.

Expanded Polystyrene is HFC, CFC, and HCFC, free and uses Pentane as its blowing agent; Pentane has a GWP of zero.

Climate Change

Life Cycle Analysis (LCA) measures all the impacts associated with the manufacture of a product, including manufacture and transport of raw materials, use of fuels and production of wastes, over the life cycle of the product (cradle to grave) or from production to installation (cradle to gate).

BRE environmental profiles report the amount of Climate Change (based on the LCA) caused by the manufacture of 1 tonne of a product, or in the construction of a metre square of construction element. This will include the GWP caused by the release of any blowing agent, as well as emissions of CO₂ from the use of fuels.

The Ecopoint Score from the Environmental Profiles are transposed to an A B C Rating system in the BRE Green Guide to Housing Specification (available from www.brebookshop.com).

In this guide, EPS insulation has an A Rating (low environmental impact) for all issues apart from the recycling issues, to give an overall Summary Rating of A for EPS.