

Technical Leaflet | September 2016

® = registered trademark of BASF SE

Styropor® F 15 E Series

Application

For the production of expanded foams having fire characteristics in conformity with:

- DIN 4102-B1 (flame-retardant)
- EN ISO 13501-1-E

For additional information pertaining to the fire behavior please contact the local BASF representative.

Styropor® F 215 E	Production of expanded foam blocks, elastified for impact sound insulation and thick-walled moldings
Styropor® F 315 E	Production of expanded foam blocks and moldings of wall thickness greater than 8mm
Styropor® F 415 E	Production of expanded foam moldings of wall thickness greater than 6mm

Product description

Expandable polystyrene (EPS) containing uniformly distributed polymeric flame retardant (blowing agent: pentane).

Product	Bead size range	Sieve analysis	
Styropor® F 215 E	1.0-2.0mm	>2.1mm	max. 2%
		0.8-2.1mm	min. 94%
		<0.8mm	max. 4%
Styropor® F 315 E	0.7-1.0mm	> 1.12mm	max. 5%
		0.4-1.12mm	min. 92%
		<0.4mm	max. 3%
Styropor® F 415 E	0.4-0.7mm	>0.8mm	max. 2%
		0.4-0.8mm	min. 91%
		<0.4mm	max. 7%

Physical form as supplied

Styropor® F 15 E is supplied in the form of rounded beads.

Storage

Styropor® F 15 E products should always be stored in a cool place, i. e. as far as possible at temperatures up to a maximum of 20°C in order to keep losses of blowing agent low. Styropor® is normally supplied in cardboard containers. It can be stored in these unopened receptacles for 1 month respectively before processing.

The receptacles have to be protected against the effects of weather (rain, snow, frost, sun) and against damage.

The contents of open containers should be processed quickly. At other times the containers are to be kept well sealed.

Product	Usual bulk density-range	Recommended intermediate aging period	Bulk density achievable in single pre-expansion
Styropor® F 215 E	10-30kg/m ³	10-48h	15kg/m ³
Styropor® F 315 E	16-30kg/m ³	10-48h	16kg/m ³
Styropor® F 415 E	20-30kg/m ³	10-24h	18kg/m ³

Processing

In order to conform with the Fire Test Certification, different materials should not be mixed.

Styropor® F 15 E products are converted to expanded foam in 3 stages.

Pre-expansion and intermediate aging:

The lowest achievable bulk density depends on the type and mode of operation of the pre-expansion equipment. The customary bulk density range for further processing to form molded parts or blocks is reliably controlled on technically sound, discontinuously operating installations. The intermediate aging period should be chosen as a function of the bulk density, the ambient temperature and the planned application.

Final expansion:

Styropor® F 15 E products are finally foamed out to expanded foam in commercial block molds and automatic molding machines. Moldings can be manufactured at relatively high mold temperatures and with short cycle times and low specific steam consumption. Even in complicated molds, good moldfilling can be achieved.

Further processing (to form footfall sound insulation boards):

Material which has been doubly pre-expanded should be used for the production of footfall sound insulation boards having good dynamic stiffness. The blocks should be elastified by pressing for about 4 to 6 hours up to a maximum of 24 hours after demolding. Cutting up into boards should be done at the earliest 24 hours after elastification.

Safety notes

It is to be noted that in the storage and processing of Styropor® and of the expanded foams manufactured from it, flammable mixtures of blowing agent (pentane) and air can be produced due to blowing agent diffusing out and therefore all conceivable sources of ignition are to be kept away (naked flames, welding sparks, electric sparks, avoidance of electrostatic charging). A ban on smoking is to be observed without fail!

Information about the safety precautions necessary in processing may be obtained from the brochure "Fire safety during processing". In addition the "Richtlinien für die Vermeidung von Zündgefahren infolge elektrostatischer Aufladungen" (Guidelines for the avoidance of fire hazards as a result of electrostatic charges), BG Chemie, 7th Edition, 2004, are to be observed.

The contents of open containers should be processed quickly. At other times the containers are to be kept well sealed.

The transportation of Styropor® or of expanded foams freshly made from it in unventilated or closed means of conveyance is not permissible. Further information regarding transports is given in the respective Technical Information bulletin.

Biological action

During the storage and in the processing of Styropor® pentane escapes. Especially when cutting the expanded foams with heated wires care is to be taken to remove the vapors arising by suction since apart from pentane they also contain small amounts of styrene.

The maximum allowable concentration values for styrene and for pentane are to be observed.

Expanded foams made from Styropor® have been manufactured and processed for several decades. In this time no effects harmful to health whatsoever have been ascertained.

Food legislation

Foams made of Styropor® F 15 E products shall not be used in direct contact with food.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.