

# PRODUCT DATA SHEET

## COLETANCHE ES 4 HFA



### DESCRIPTION

COLETANCHE ES 4 HFA is an SBS elastomeric modified bituminous geomembrane.

### USE

Extreme level of mechanical resistance, for use as environmental protection and underground works waterproofing (aggressive materials, reinforced precautions), in particular :

- Railways, directly under ballast,
- Dams

The membrane has the same friction angle on both sides.

Product use must be validated by Axter.

### APPLICATION METHOD

By torch welding or other similar technique.

### STORAGE

Rolls must not be stored directly on the ground. Provide suitable supports (blocks, slides, wooden planks) with a minimum height of 35 cm to be placed under the ends of the mandrel.

### COMPOSITION

(indicative)

Reinforcement (oz/yd <sup>2</sup> ) :	Glass mat	1.5
Reinforcement (oz/yd <sup>2</sup> ) :	Non-woven geotextile	11.8
Binder (oz/yd <sup>2</sup> ) :	Elastomeric SBS	159.2
Surface finish (oz/yd <sup>2</sup> ) :	Sand	7.4
Under surface finish (oz/yd <sup>2</sup> ) :	Peel-off silicone film	1.2

### CHARACTERISTICS

		STANDARD	UNITS	AVERAGE	Min
Dimensions	Length	-	ft	180	177
	Width		ft	16.7	16.4
Thickness (on finished product)		ASTM D 5199	mils	220	189
Surface mass		ASTM D 3776	oz/yd <sup>2</sup>	189	174
Resistance to tearing	Longitudinal	ASTM D 4073	lbf	275	207
	Cross direction			230	173
Tensile properties : maximum tensile strength	Longitudinal	ASTM D 7275	lbf/in.	200	167
	Cross direction			171	132
Tensile properties : elongation	Longitudinal		%	60	45
	Cross direction			60	45
Static Puncture		ASTM D 4833	lbf	146	132
Flexibility at low temperature	Longitudinal	ASTM D 5147	°F	-4	5
	Cross direction			-4	5
Water permeability (liquid tightness)		ASTM E 96	m/s	6.10 <sup>-14</sup>	<
Gas permeability (gas tightness)		ASTM D 1434-82	m <sup>3</sup> /(m <sup>2</sup> .j.atm)	2.10 <sup>-4</sup>	<

NOTE: AXTER COLETANCHE INC. may modify the composition and/or utilisation of its products without prior notice. Consequently orders will be filled according to the latest specification.

