



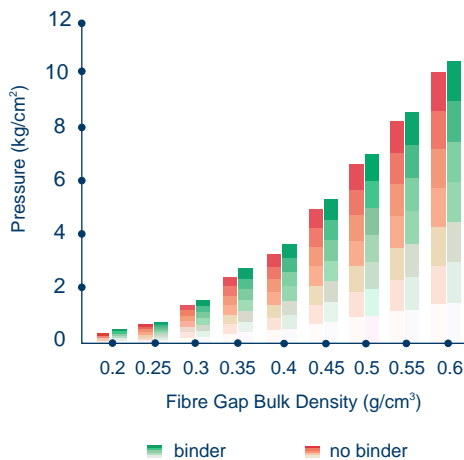
Ecoflex 200
Product Data



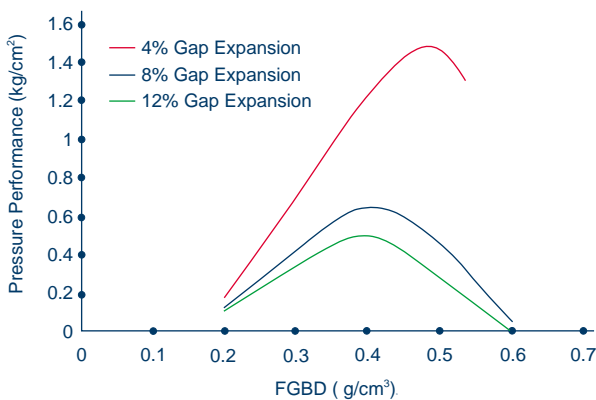
Ecoflex 200 - Product Data

	Fibre Basis Weight FBW (gsm)	Bonded Basis Weight BBW (gsm)
E200 / 1200	1200	1320
E200 / 1320	1320	1452
E200 / 1450	1450	1595
E200 / 1600	1600	1760
E200 / 1800	1800	1980
E200 / 2400	2400	2640

Initial Pressure Performance



Ecoflex 200: Long term pressure performance 1000 cycle: ratio of canned gap to expanded shell gap



Fibre Based Substrate Support Systems

Ecoflex is a fibre-based non-intumescent support mat for catalytic converters. The unique fibre properties enable the mats to perform at low (diesel) operating temperatures, where traditional intumescent systems may not reach activation temperature, and in high temperature pre-converter applications where intumescent products reach their performance limits.

Saffil Automotive "application team" have developed a series of performance tests to ensure Ecoflex meets the demands of the modern catalytic converters and diesel particle filters.

Ecoflex substrate support systems are available in a range of different basis weights to meet the needs of different types of operating system.

Pressure Performance Testing

Ecoflex fibre mats are a soft canning solution used with thin & ultra thin wall substrates. The initial pressure ensures that the fibre mat holding force does not exceed the isostatic pressure of the monolith.

The chart opposite shows the relationship between canned gap bulk density and compressive force of the mat. The typical operating fibre gap bulk density of Ecoflex mats is 0.30 to 0.48 g/cm³.

Mat Aging/Long Term Cycling Test

Mechanical aging of the mat due to outer shell expansion and contraction at operational temperatures is a key indicator of the performance of the mat in the application.

The chart opposite shows the relationship of GBD to compressive force after mat aging and measured at different gap changes, to simulate different thermal conditions. The mat is designed to exceed the minimum holding forces needed to retain the substrate.

Resistive Thermal Exposure

Ecoflex substrate support systems are canned and thermally cycled between ambient and various operating temperatures to simulate the mechanical stresses on the mat due to outer shell expansion. The sample then undergoes a heated push out test to ensure the residual shear stress remains above the calculated minimum value.

$$\text{Residual Shear Strength} = \frac{\text{Push Out Force}}{\text{Mat: Can Contact Area}}$$

Ecoflex mats have outstanding thermal resistance to withstand the constantly changing temperature demands, and excellent fibre resiliency which retains the substrate especially at operational temperatures where the metal shell is at its largest diameter.

The chart opposite shows samples canned using a tourniquet technique and 350/6.5 substrate. The temperature was cycled 500 times, from 100°C to 900°C. After cycling substrate subjected to a hot push-out test.

Gas Erosion Durability

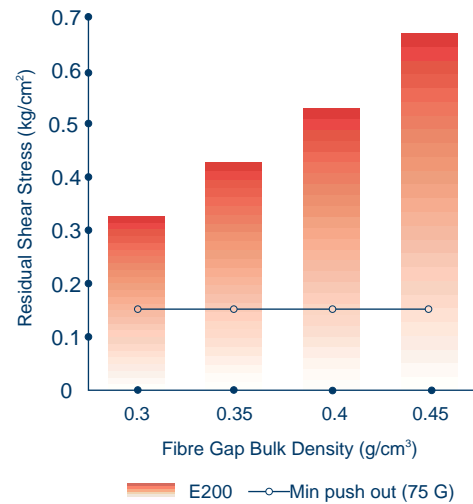
Ecoflex 200 is composed of Saffil alumina fibres which have outstanding gas erosion resistance properties in mat format.

Mat erosion, caused by the exhaust gas flow eroding the integrity of the mat, is most likely to occur in instances of low GBD and when the outer shell is at its largest expanded diameter. Under these conditions the holding forces on the interfaces are at their lowest. Ecoflex mats retain their erosion resistance across the recommended GBD range.

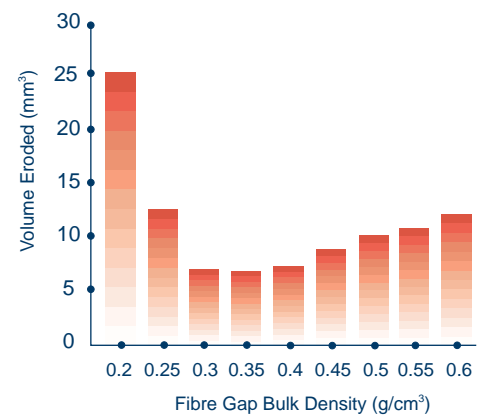
An eroded mat is detrimental to the converter operation and could cause gas by-pass of the catalyst, limiting the catalyst efficiency or even substrate slippage and potentially converter failure.

Ecoflex Substrate Support Systems do not require the use of protective edge seals. The chart opposite shows an ambient temperature test, by means of air pulses impinging on mat. Erosion is quantified by volume of mat eroded, thus the lower the value the higher the resistance.

Heated push out after thermal RTE cycling



Ecoflex 200 Series Cold Gas Erosion



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