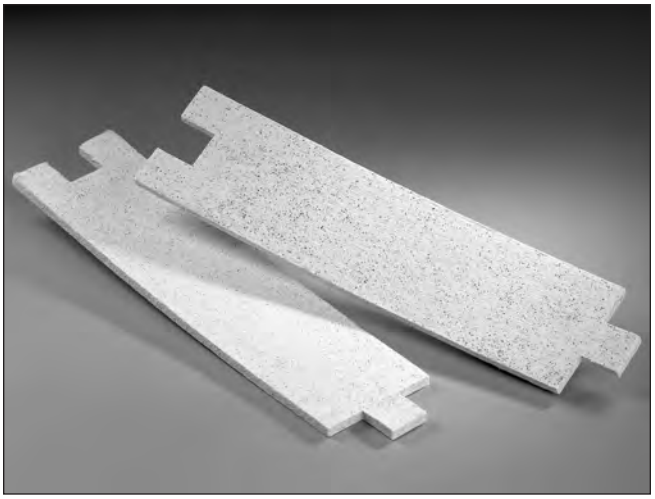
Product Information Sheet

IsoMat® AV5 Substrate Support Mat



Introduction

Unifrax is pleased to introduce IsoMat® AV5 support mat system. IsoMat AV5 is designed to function as mechanical support for the ceramic substrate and act as an exhaust gas seal while providing thermal insulation.

As a manufacturer of fibers used in a variety of catalytic converter mounting systems, Unifrax has successfully combined fiber-making expertise with a state-of-the-art paper manufacturing process to maximize the performance of IsoMat AV5.

IsoMat AV5 offers superior performance at low temperatures and has excellent thermal stability with a continuous use temperature of 750°C average mat temperature (Reference SAE Paper 2007-01-0471). Performance at low temperatures is provided by a structural support matrix of Isofrax® fibers held together by a proprietary binder system, and it is equivalent to typical non-intumescent support mat systems. At elevated temperatures, the fiber matrix support is complemented by vermiculite expansion to absorb additional gap expansion. As a result, the holding force of the system is maintained over a broad range of temperature. This makes IsoMat AV5 an ideal solution for a wide range of emission control devices, including large diesel oxidation catalysts (DOC), diesel particulate filters (DPF), and selective catalyst reduction units (SCR), as well as gasoline oxidation catalysts, including ethanol (flex fuel) underbody converters.

IsoMat AV5 has been designed to provide robust performance without the need for wire mesh ring protection (for erosion) or heat treatment for additional holding force at low temperatures.

Product Availability

Basis Weight	Nominal Thickness*	Nominal Installed Gap
(g/m^2)	mm	mm
2100	7.2	3.0
2350	8.0	3.5
2700	9.2	3.8
2900	9.9	4.2

*Thickness measured @ 0.725 kPa

Typical Properties

Thermal Conductibility at 650°C*	0.18 W/mK
Tensile Strength	100.0 kPa

*ASTM – C177

Chemical Composition

Isofrax® Fibers	70.0%	± 5.0%
Vermiculite	20.0%	± 5.0%
Binder*	5.0%	± 2.5%

*Contains silicone

Canning Performance

IsoMat AV5 is typically installed at a nominal gap bulk density (GBD) of 0.70 g/cm^3. The room temperature compression behavior of IsoMat AV5 is shown in Figure 1. The GBD range for each specific application will be defined according to the requirements for holding force and substrate strength. Unifrax provides a global network of application engineering services and will provide you with a support mat recommendation for your specific converter design.

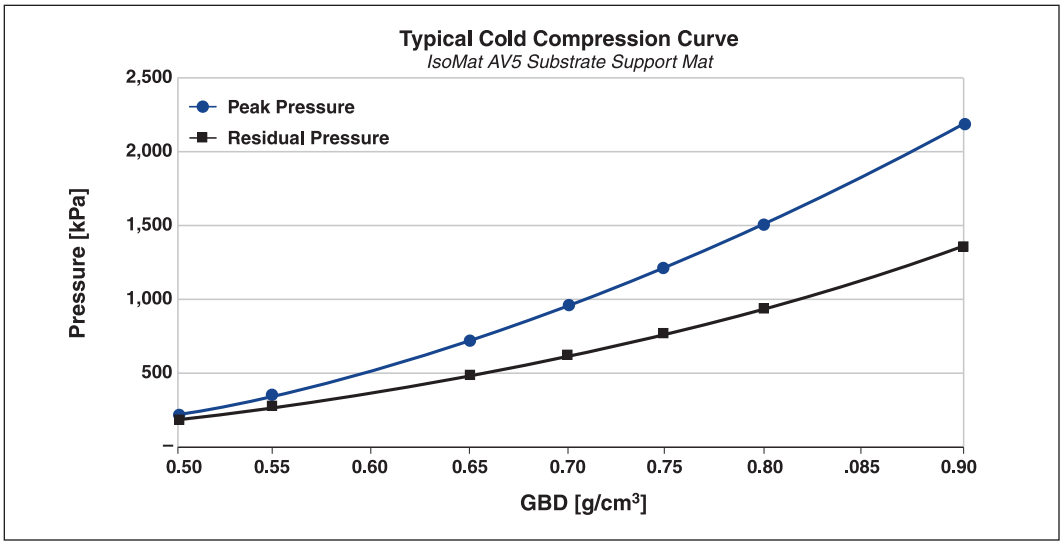


Figure 1: Typical cold compression curve for IsoMat AV5 support mat.

Erosion Resistance

Support mat erosion may occur as a result of improper support mat installation or due to lack of holding force of the fiber matrix. Different types of support mat are more susceptible to erosion than others. IsoMat AV5 can be properly designed in order to present a low erosion profile. Figure 2 presents comparative erosion loss for IsoMat AV5 and XPE® AV2 as a function of GBD.

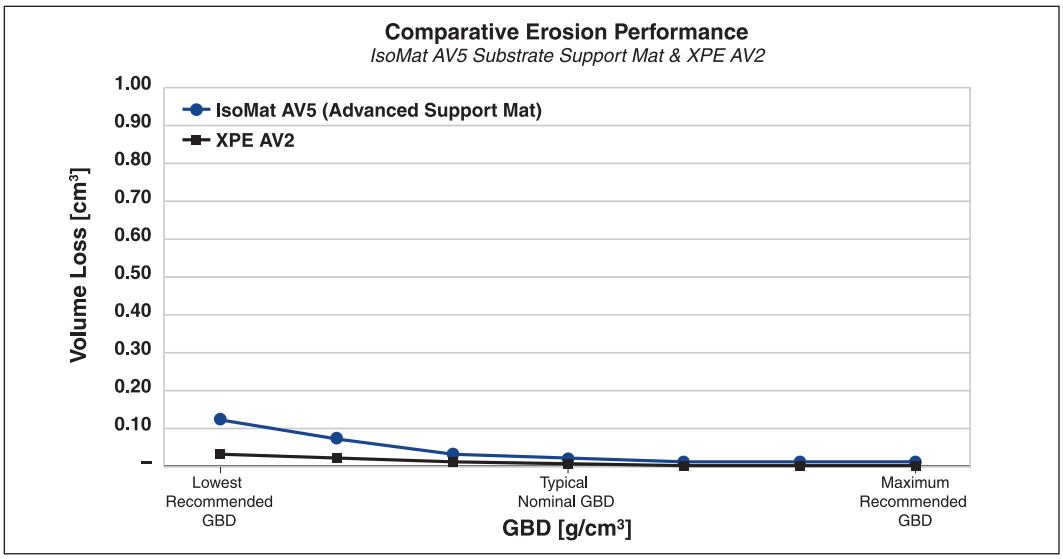


Figure 2: Comparative erosion data for IsoMat AV5.

Support Mat Aging Performance – Typical Curve For IsoMat AV5

IsoMat AV5 is designed to present robust performance over a broad temperature range. Figure 3 presents a typical aged mat performance curve for IsoMat AV5 as a function of temperature. Factors such as design nominal gap and thermal shell expansion also influence support mat performance. Please contact our Application Engineering department for additional information regarding the performance of IsoMat AV5 under specific operating conditions.

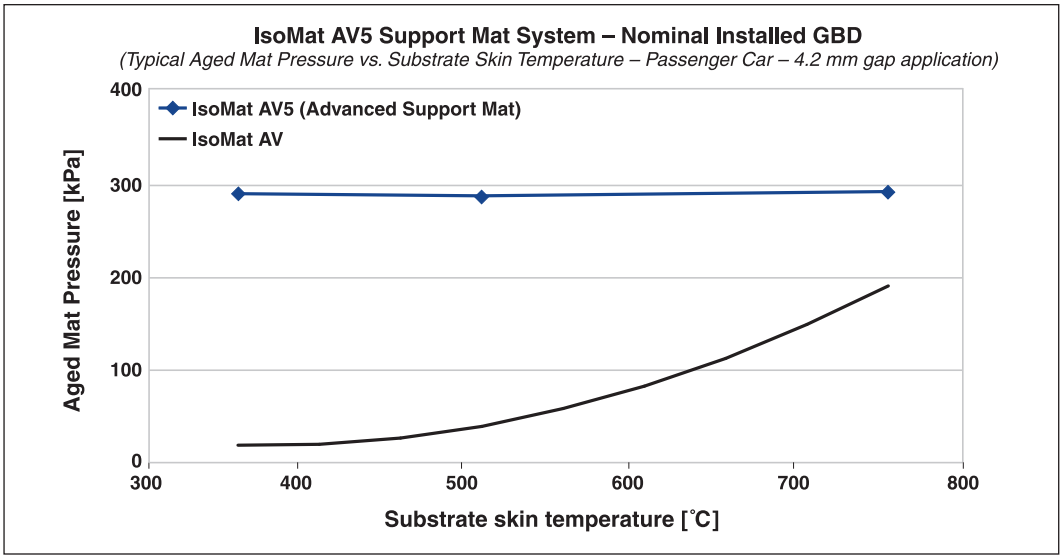


Figure 3: Typical aged mat pressure for IsoMat AV5 as a function of temperature.

Isofrax Fiber – Health and Safety Information

Isofrax fibers have been tested pursuant to EU protocol ECB/TM/26 Revision 7, Nota Q, Directive 97/69/EC. Isofrax fibers do not require additional labeling, further testing, or special handling practices.

Intratracheal Instillation Biopersistence Testing per the German Hazardous Substances Ordinance has been conducted on Isofrax fibers with results that are below German regulatory thresholds. Requirements of the German Hazardous Substances Ordinance [October 26, 1993 as amended June 18, 1998] do not apply.

Therefore, IsoMat AV5 is certified as a Class-Zero, True Green Support Mat System. Certifications are available upon request.

Worldwide Technical Support

Unifrax is a worldwide sales and service organization with several international locations and representatives. The services that we provide include thermal modeling, system design engineering assistance, and failure analysis as well as technical exchange programs. For additional information regarding IsoMat AV5 or any of our catalytic support mats, please contact the Unifrax Automotive Application Engineering Department at 716-768-6461.

Refer to the product Material Safety Data Sheet (MSDS) for recommended work practices and other safety information.

Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

Form C-3141
Effective 10/14

Printed in USA

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

Product Information Sheets are periodically updated by Unifrax. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

Unifrax I LLC
Corporate Headquarters
600 Riverwalk Parkway
Suite 120
Tonawanda, NY 14150
Telephone: 716-768-6500
Internet: www.unifrax.com
Email: info@unifrax.com