Product Information Sheet

PC-Max® 2000i Substrate Support Mat

Introduction

Unifrax is pleased to introduce PC-Max® 2000i, the newest member of our polycrystalline fiber (PCW) support mat product family. An all-fiber, non-intumescent material, PC-Max 2000i was specifically developed by Unifrax to meet the most challenging applications in today's emission control systems.

PC-Max 2000i utilizes needled Fiberfrax® polycrystalline high alumina sol-gel (PCW) fibers that provide proven long-term performance under all temperature ranges from ambient up to 1000°C inlet gas temperature. As well as being thermally durable, PC-Max 2000i exhibits no adverse effects from exposure to fuel condensates, water, or urea.

PC-Max 2000i is extremely flexible, has excellent handleability, provides improved worker comfort, and accommodates the full spectrum of canning techniques currently in use. It also provides superior erosion resistance, eliminating the need for wire mesh rings or other forms of support mat edge protection.

PC-Max 2000i's combination of physical characteristics make it an ideal solution for demanding applications such as close coupled ultra-thin walled catalytic converters and large diesel particulate filters. It is also suitable for a wide range of emission control devices including diesel oxidation catalysts (DOC), selective catalyst reduction units (SCR), and underbody converters (gasoline, diesel, and ethanol flex fuel).

Product Availability

Basis Weight**	Nominal Thickness*	Nominal Installed Gap
(g/m^2)	mm	mm
1300	9.0	3.6
1450	9.0	4.0
1700	10.5	4.8

* Thickness measured @ 0.725 kPa

** Basis Weight – Fiber + Binder

Typical Composition & Properties

Fibers	100%
Loss on Ignition	<1.5%

Canning Performance

PC-Max 2000i is typically installed at a nominal gap bulk density (GBD) of 0.36 g/cm^3. The room temperature compression behavior of PC-Max 2000i 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 a support mat recommendation specific to your system design.

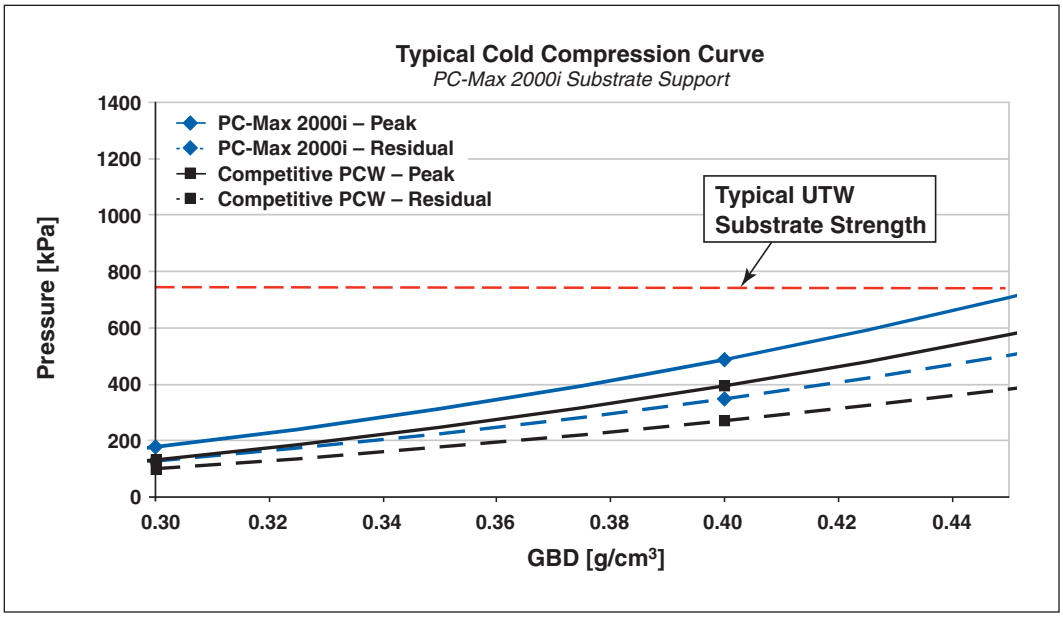

Figure 1: Typical Cold Compression Curve for PC-Max 2000i support mat.

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. PC-Max 2000i has been designed specifically to present a low erosion profile. Figure 2 presents comparative erosion resistance for different support mat types as a function of GBD.

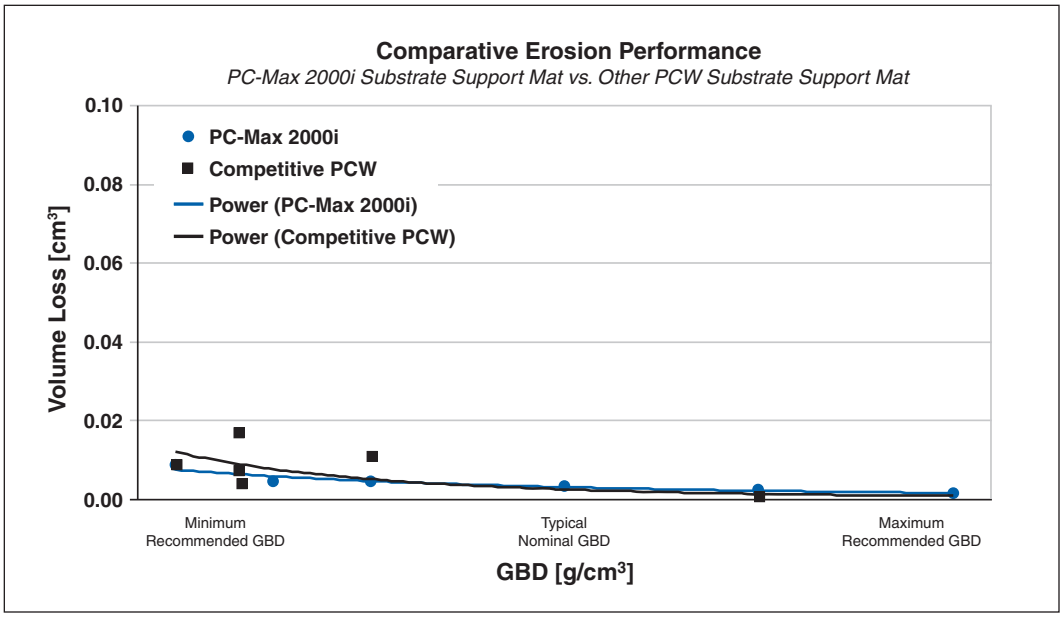

Figure 2: Comparative erosion data for PC-Max 2000i support mat.

Friction Performance Data

Understanding how the support mat's friction coefficient influences canning and long-term performance is a key to a robust design. Unifrax measures the friction coefficient between the support mat and the shell at room temperature (important during canning) and also at different operating temperatures (which is important when the converter is under normal operating conditions). Figure 3 presents PC-Max 2000i's performance under cold condition against stainless steel.

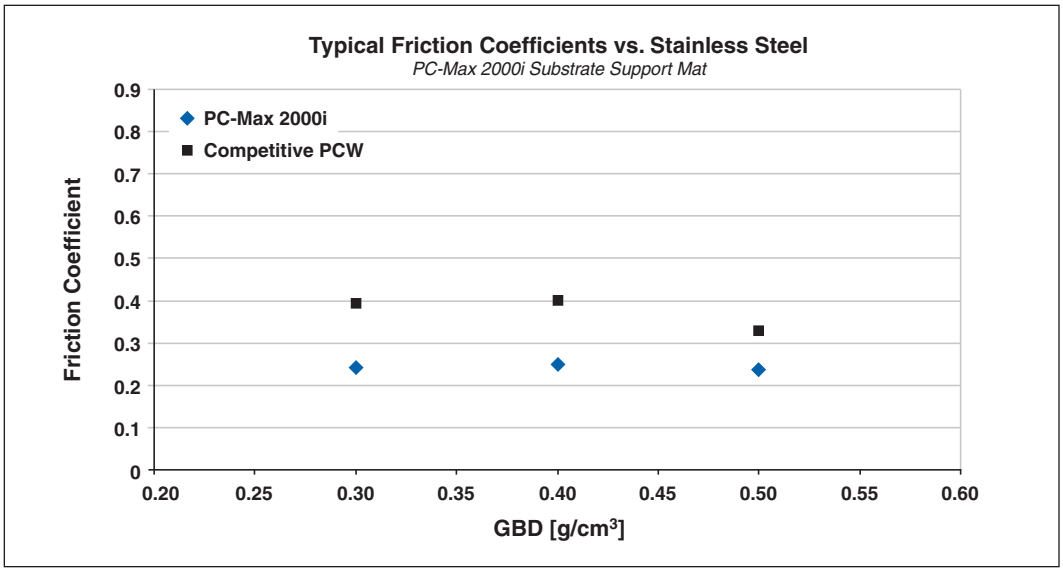

Figure 3: Comparative cold friction data for PC-Max 2000i support mat.

Support Mat Aging Performance

PC-Max 2000i is designed to present robust performance at operating temperatures above 1000°C. Figure 4 presents the typical aged mat performance for PC-Max 2000i compared to a competitive non-intumescent mat 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 PC-Max 2000i under specific operating conditions.

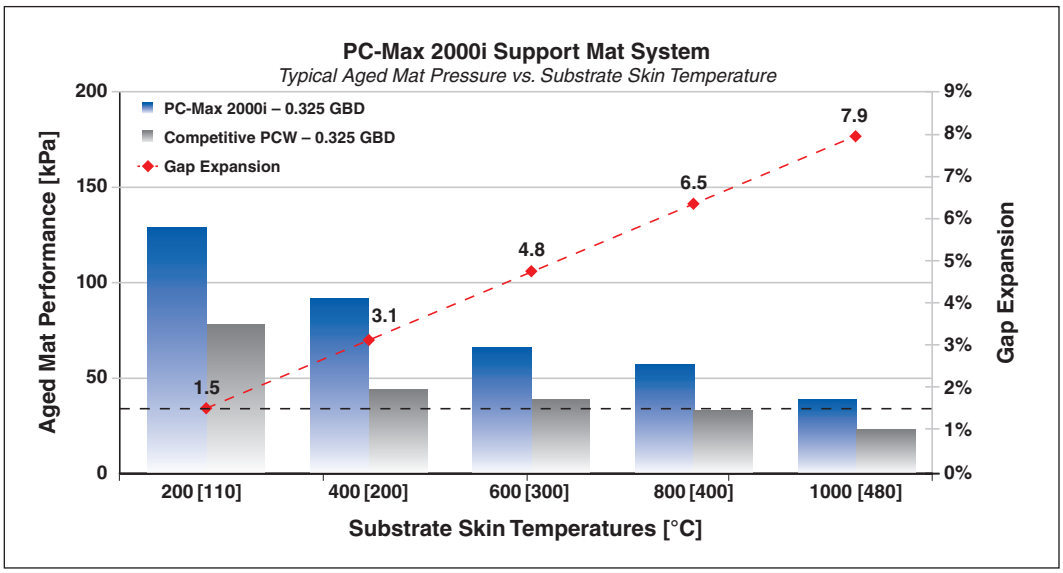

Figure 4: PC-Max 2000i comparative support mat aging test as a function of temperature.

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 PC-Max 2000i or any of our catalytic support mats, please contact the Unifrax Emission Control Application Engineering Department at 716-768-6461 or aecoordinator@unifrax.com.

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

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

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