

## CC-Max<sup>®</sup> 5 Substrate Support Mat

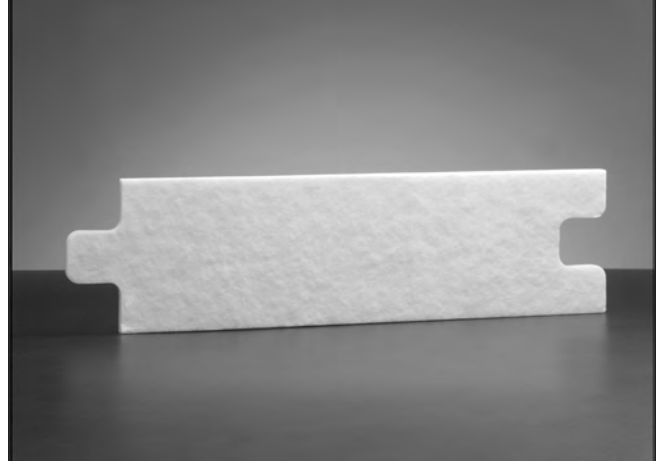
### Introduction

Unifrax is pleased to introduce CC-Max<sup>®</sup> 5, the latest member of the CC-Max non-intumescent support mat system.

The CC-Max product line is a revolutionary non-intumescent support mat system specifically developed by Unifrax for mechanical support of ceramic substrates used in emission control devices. As a manufacturer of fibers used in a variety of emission control device mounting systems, Unifrax has successfully utilized furnacing expertise and state-of-the-art processing technology to produce a unique non-intumescent mat product with superior performance properties.

CC-Max 5 offers excellent holding force in all temperature ranges from low-temperature diesel systems up through 1050°C inlet gas temperature. CC-Max 5 also offers superior erosion resistance, allowing it to provide robust design solutions across a wide range of system inputs. Finally, CC-Max 5 was developed to be less irritating to improve the working conditions for shop personnel.

This unique combination of science and technology allows CC-Max 5 to be used in a broad range of emission control devices, including diesel oxidation catalysts (DOC), diesel particulate filters (DPF), selective catalyst reduction units (SCR), underbody converters, and close coupled converters (gasoline, diesel and ethanol flex fuel).



### Product Availability

Basis Weight	Nominal Thickness*	Nominal Installed Gap
(g/m <sup>2</sup> )	mm	mm
1200	6.8	3.0
1400	7.9	3.5
1600	9.0	4.0
2400	13.5	6.0
2700	15.2	6.8
3200**	18.0	8.0

\*Thickness measured @ 0.725 kPa

\*\*Laminated

Additional basis weights available upon request.

### Typical Composition & Properties

Fibers	88-94%
Loss on Ignition	5-10%

## Canning Performance

CC-Max 5 is typically installed at a nominal gap bulk density (GBD) of 0.40 g/cm<sup>3</sup>. The room temperature compression behavior of CC-Max 5 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.

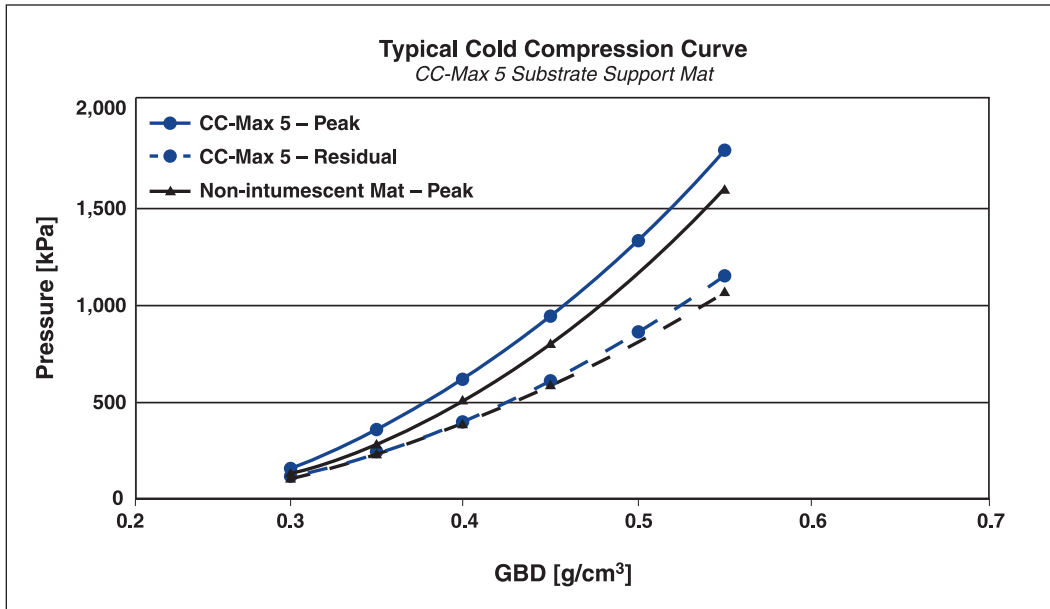


Figure 1: Typical Cold Compression Curve for CC-Max 5 support mat.

## Erosion Resistance

Support mat erosion may occur as a result of improper support mat installation or due to a lack of holding force of the fiber matrix. Different types of support mat are more susceptible to erosion than others. CC-Max 5 has been designed specifically to present a low erosion profile. Figure 2 shows comparative erosion resistance for different support mat types as a function of GBD.

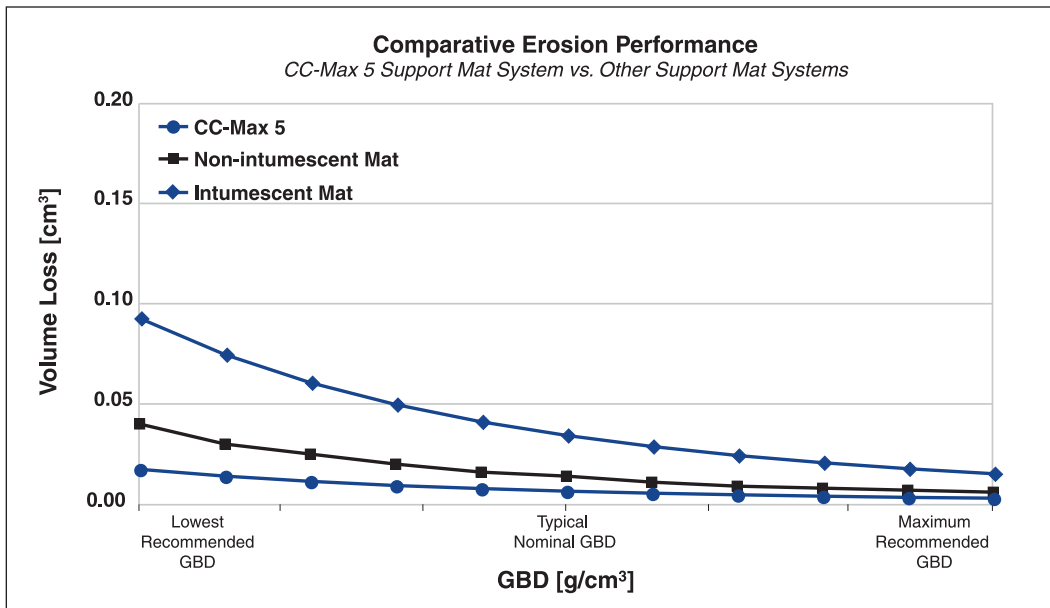


Figure 2: Comparative erosion data for CC-Max 5.

## Support Mat Aging Performance

CC-Max 5 is designed to present robust performance at operating temperatures up to 1050°C inlet gas temperature. Figure 3 shows a typical aged mat performance for CC-Max 5 compared to a traditional 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 CC-Max 5 under specific operating conditions.

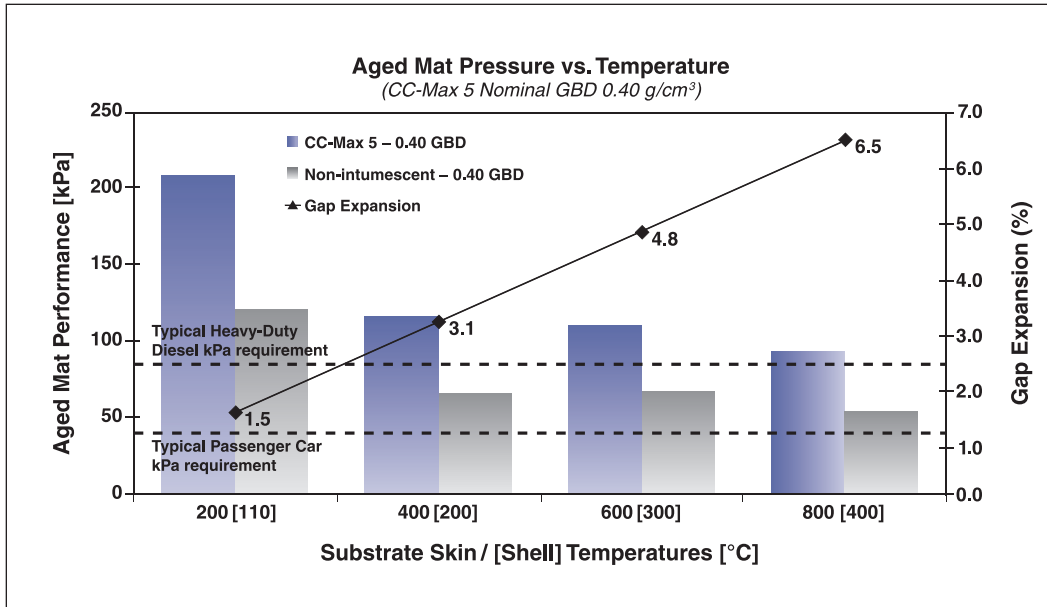


Figure 3: CC-Max 5 comparative support mat aging test.

## 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 CC-Max 5 or any of our catalytic support mats, please contact the Unifrax Emission Control Application Engineering Department at 716-768-6461.

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.



**Unifrax I LLC**  
*Corporate Headquarters  
600 Riverwalk Parkway  
Suite 120  
Tonawanda, NY 14150  
Telephone: 716-768-6500  
Internet: [www.unifrax.com](http://www.unifrax.com)  
Email: [info@unifrax.com](mailto:info@unifrax.com)*