

# KINETICS™

## Fiberglass Composites Model PC

### Description

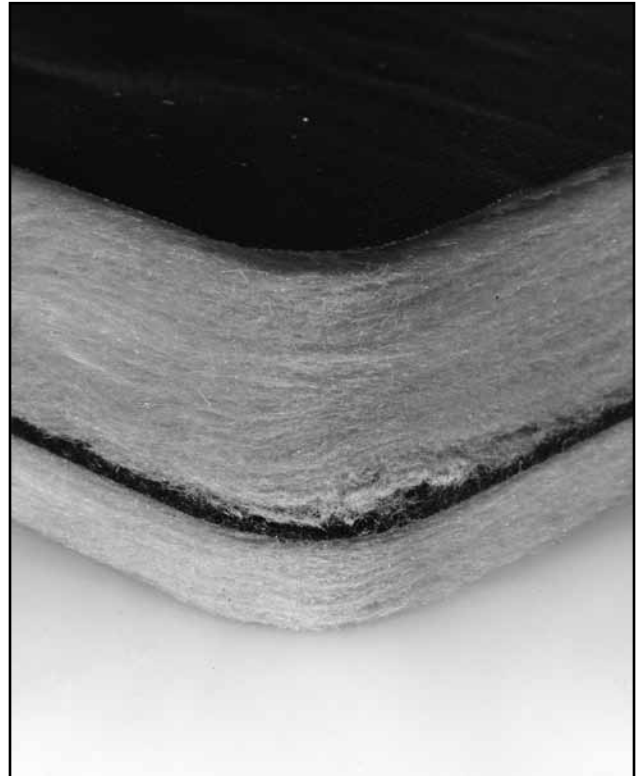
Model PC composites, when attached to an enclosure or barrier, both increase its sound transmission loss rating, and increase its capability to absorb reverberant sound.

PC Composites are available as single composites and double composites. Single composites (PC 410 GOD and PC 410 GBD) are used to add damping to an enclosure and to increase absorption. Double composites (PC 410/410 GOD and PC 410/410 GBD) are used to add decoupled mass to an enclosure, increasing both absorption and transmission loss.

Kinetics single composites (PC 410 GOD and PC 410 GBD) contain mass barrier/damping sheets which can be attached to an enclosure or barrier to reduce vibration, thus increasing its transmission loss capability. The fiberglass absorption layer, either unfaced or with a black high-temperature facing, provides additional sound absorption on the noisy side of the enclosure or barrier.

Kinetics double composites (PC 410/410 GOD and PC 410/410 GBD) contain a 0.50 PSF (2.5 kg/m<sup>2</sup>) mass layer which is separated from the enclosure or barrier by a fiberglass decoupling material, which yields far greater sound transmission loss than could be achieved by adding mass directly to the barrier. The fiberglass absorption layer, with a black, high-temperature facing, provides additional sound absorption on the noisy side of the enclosure or barrier wall. To achieve the best structural strength, it is recommended that double composites be mechanically fastened to the barrier especially on vertical or overhead applications.

Kinetics double composites are most often used in the lining of enclosures around industrial process machines or as part of OEM components to reduce sound transmission. Kinetics fiberglass composites are available in 32" x 48" (813 mm x 1219 mm) sheets, and can be die cut or saw cut to customer-specified dimensions.



### Application

Model PC Fiberglass Composites are recommended for direct attachment to noisy equipment enclosures or cabinets. They are particularly effective when adhered to the inside of cabinets or enclosures surrounding a noise source. They are recommended for applications where high ambient temperatures may be encountered. Because Model PC Composites contain a mass barrier, or damping sheet, they increase sound transmission class (STC) ratings of cabinets or enclosures.

### Typical applications include:

- Interior lining of engine compartments
- Sheet metal equipment guards
- Light-gauge aluminum or metal ducts
- Electric motor-driven equipment enclosures
- Portable engine-generator cabinets
- Air compressor enclosures
- In-plant personnel booths

## Specifications

Noise control materials shall be a combination of a limp, flexible, acoustical barrier permanently adhered to a fiberglass decoupling/absorption layer.

The acoustical barrier shall be bonded, mastic, acoustical sheet material with a nominal thickness of 0.059" (1.5 mm) and a mass density of 0.50 lb/sq. ft. (2.5 kg/m<sup>2</sup>).

The fiberglass absorption layer shall be 4 PCF (64 kg/m<sup>3</sup>) density fiberglass with a nominal thickness of 1" (25 mm) bonded to one side of the barrier sheet. The fiberglass decoupler used in double composites shall be 4 PCF (64 kg/m<sup>3</sup>) fiberglass with a nominal thickness of 1" (25 mm) bonded to the opposite side of the barrier sheet.

The fiberglass absorber facing used on PC 410 GBD composite shall be a black, vinyl-coated, fiberglass cloth capable of withstanding high temperatures. The facing shall be bonded to the fiberglass absorber on the face opposite the acoustical barrier.

## Sound Absorption Coefficients

Frequency, Hz

Model	125	250	500	1000	2000	4000	NRC
PC 410 GOD	0.10	0.40	0.35	0.54	0.73	0.85	0.57
PC 410 GBD	0.22	0.56	0.70	0.71	0.51	0.28	0.62
PC 410/410 GBD	0.22	0.56	0.70	0.71	0.51	0.28	0.62

## Sound Transmission Loss

Frequency, Hz

Model	125	250	500	1000	2000	4000	STC
Adhered to 18 ga. steel PC 410/410 GBD	20	32	44	61	64	60	43
Adhered to 1/4" Plywood PC 410/410 GBD	13	29	39	60	61	59	37

**Single Composites:** to add damping and absorption to a barrier surface

**PC 410 GOD:** Mass layer/damping sheet, with adhesive transfer surface. 1" (25 mm), 4 PCF (64 kg/m<sup>3</sup>) unfaced fiberglass absorber

**PC 410 GBD:** Mass layer/damping sheet, with adhesive transfer surface. 1" (25 mm), 4 PCF (64 kg/m<sup>3</sup>) black faced fiberglass absorber

**Double Composites:** to add decoupled mass and absorption to a barrier surface

**PC410/410 GBD:** 1" (25 mm) 4 PCF (64 kg/m<sup>3</sup>) decoupling fiberglass, 0.5 PSF (2.5 kg/m<sup>2</sup>) mass layer, 1" (25 mm), 4 PCF (64 kg/m<sup>3</sup>) black faced fiberglass absorber

## Fire ratings

### Maximum Temperature:

PC 410 GOD = 350°F (177°C)

PC 410 GBD = 450°F (232°C)

PC410/410 GBD = 450°F (232°C)

### Component Breakdown:

#### 1) Fiberglass core:

K factor per ASTM C-177 = 0.230

Surface Burning Characteristics per ASTM E-84

Flame Spread = 15

Smoke Development = 0

Fuel Contributed = 15

#### 2) Black Vinyl impregnated fiberglass facing

rated UL-84 Class 1 Flame Resistance

Flame Out = 2.0 Sec. max.

After Glow = 2.0 Sec. max.

Char Length = 2.0 In. max.

Noise control materials shall be Model PC as manufactured by Kinetics Noise Control, Inc.



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