

## Physical Properties - Metric

### Plastics and Rubber Process Insulation

Pyropel® is available in three different forms:

#### Low Density (LD)

A flexible form of Pyropel®, Pyropel LD is an industrial nonwoven. Typically used where thermal control is the major engineering concern, Pyropel LD can be easily wrapped around complex shapes or converted into insulation kits. Unlike other blanket type insulators, Pyropel LD is binder-free and has none of the shedding concerns of other common fiber-based materials

#### Medium Density (MD)

Pyropel MD is a lightweight fiberboard with superior insulation properties. Pyropel MD-12, MD-18, and MD-30 are semi-rigid and are normally used in areas that require both isolation and limited mechanical resistance.

Pyropel MD-50 and MD-60 are rigid insulation for mechanically demanding areas. More resilient, MD-50 is ideal when loading is not evenly distributed or when equipment alignment is not perfect. MD-60 is the most structurally rigid grade of Pyropel MD and offers the highest compression resistance and physical tolerances.

#### High Density (HD)

Pure polyimide plate, Pyropel HD is easily machined to make both mechanical and thermal components for highly engineered equipment. These components include high-temperature spacers, washers, slides, and bearings.

	Test Method	LD-6	MD-12	MD-18	MD-30	MD-50	MD-60	HD Plate
<b>PHYSICAL</b>								
Form	-	flexible blanket	semi-rigid fiberboard	Semi-rigid Fiberboard	Semi-rigid Fiberboard	Rigid Fiberboard	Rigid Fiberboard	Solid Plastic
Color	-	Yellow	Gold	Gold	Gold	Gold	Light Brown	Black
Density	-	0.1g/cm <sup>3</sup>	0.19g/cm <sup>3</sup>	0.29g/cm <sup>3</sup>	0.48g/cm <sup>3</sup>	0.80g/cm <sup>3</sup>	0.96g/cm <sup>3</sup>	1.36g/cm <sup>3</sup>
Standard Thickness	-	3.2–5.4mm	3.2–9.4mm	3.2–6.4mm	8.0mm	8mm	4, 6.4mm	6.4, 12.7mm
Standard Sheet Size	-	1.3m wide	1.2 x 2.4m	1.2 x 2.4m	0.6 x 0.9m	0.6 x 0.9m	0.6 x 0.9m	305x305cm
<b>MECHANICAL</b>								
Tensile Modulus	D-638	-	107,000 kPa	186,200 kPa	216,500 kPa	750,000 kPa	1,150 MPa	3.930 MPa
Yield Strength	D-638	-	10,340 kPa	11,170 kPa	4,620 kPa	13,510 kPa	21,170 kPa	70 MPa
% Elongation @ 2% Offset	-	-	-	-	-	-	-	-
@ Break	-	-	6%	6%	4%	4%	4%	-
	-	-	31%	22%	29%	13%	6%	2%
Compression Modulus	D-638	-	5,500 kPa	15,170 kPa	103,420 kPa	317,160 kPa	104,110 kPa	3,720 MPa
Strength @ 2% strain	D-695	-	70 kPa	100 kPa	410 kPa	1,900 kPa	7,930 kPa	-
Flexural Modulus	D-790	-	13,380 kPa	45,640 kPa	130,100 kPa	340,530 kPa	911,910 kPa	3,790 MPa
<b>THERMAL</b>								
Continuous Use Temp	-	302°C	288°C	288°C	288°C	288°C	288°C	288°C
Glass Transition Temp (Tg)	-	315°C	315°C	315°C	315°C	315°C	315°C	315°C
Thermal Conductivity(k): @25°C(77°F)	C-177	.032	.036	.041	.049	.070	.114	.23
@93°C(200°F)		0.039	0.038	0.046	0.052	0.074	0.119	-
@149°C(300°F)		0.045	-	-	0.056	0.080	0.123	-
@204°C(400°F)		0.055	0.046	0.052	0.063	0.089	0.129	0.3
Flammability Rating	UL-94	-	94V-O	94V-O	94V-O	94V-O	94V-O	-

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