

COLOUR-CODED "POLYMEX" PLASTIC



PRODUCT DESCRIPTION

"POLYMEX" PLASTIC is produced from polyester films ('Melinex', 'Mylar', 'Hostaphan') to meet the particular demands of the engineering, automotive, electrical, electronic industries.

Polyester materials are remarkably tough with very high compressive and dielectric strengths, very low water absorption, excellent; dimensional stability over a wide range of temperatures and good resistance to most chemicals, ozone, and direct sunlight.



MATERIAL SPECIFICATION 'A' (THICKNESSES FROM .001" TO .015")

Thickness and colour options			
Thickness	Colour	Thickness	Colour
(23mic) .001"	Purple	(150mic) .006"	Clear
(36mic) .0015"	Pink	(350mic) .014"	Natural
(50mic) .002"	Dark Blue	(300mic) .012"	Dark Green
(65mic) .0025"	Black	(175mic) .007"	Peacock Blue
(250mic) .010"	White	(190mic) .0075"	Hazy
(375mic) .015"	Red (MX)	(200mic) .008"	Tint Blue**
(75mic) .003"	Green	(225mic) .009"	Silver
(100mic) .004"	Amber	(275mic) .011"	Gold
(125mic) .005"	Brown		

Thicker gauges (Matt Red .015" to .060") Please see Material Specification 'B'.

** .008" (200mic) is a polyester laminate, and may perform differently in some applications

GENERAL PROPERTIES	VALUES	TEST METHOD
Relative density	1.40 kg/m ²	ASTM D 1505
Water absorption	0.60% (1 week 24°C)	N/A

MECHANICAL PROPERTIES			
Property	Values		Test Method
	MD*	TD*	
Tensile strength	2000kgf/cm ²	2600kgf/cm ²	ASTM D 882
Yield strength	1000kgf/cm ²	1000kgf/cm ²	ASTM D 882
Elongation at break	125%	80%	ASTM D 882
Ultimate compressive strength	28500 psi (250A)		ASTM D 695-63T

ELECTRICAL PROPERTIES
Dielectric strength: 6.4kv (23m) 16kv (125m) 23kv (250m) - ASTM D 149
Surface resistivity: >10 ¹³ Ω/□

THERMAL PROPERTIES

Service temperature	-70°C to 130°C
Melting point	265°C
Co-efficient of thermal	19 x 10 ⁻⁶ (MD*) cm/cm/deg/c
Expansion (Between 200 & 500C)	19 x 10 ⁻⁶ (TD*) cm/cm/deg/c
Shrinkage (After 5 mins @ 1900C)	3% (MD* & TD*)

The above properties are typical and no warranty is given or is to be implied with respect to this information.

*MD -Machine direction / *TD -Transverse direction

Resistant to: dilute acids and alkalis / grease / oils / fats / organic / solvents / alcohols / hydrocarbons / ketones / esters / chlorinated compounds.

MATERIAL SPECIFICATION 'B'

This specification applies to the thickness range from .015" to .080" and are produced colour coded from specially reinforced propylene copolymer PP4 which is an excellent engineering material.

Thickness and colour options

Thickness	Colour	Thickness	Colour
(375mic) .015"	Matt Red	(1000mic) .040"	Tan
(500mic) .020"	Yellow	(1270mic) .050"	Charcoal Grey
(635mic) .025"	Light Grey	(1500mic) .060"	Cream
(760mic) .030"	Light Blue	(2000mic) .080"	Natural

Thinner gauges (.001" to .015" red MX) - Please see Material Specification sheet 'A'.

TYPICAL PROPERTIES	VALUES	TEST METHOD
Tensile strength at yield	3560 lbf/in ²	BS 2782 301 G
Ultimate compressive strength	4000-8000 psi	-
Elastic modules in tension	200.000 lbf/in ²	ASTM D790 59T
Izod impact strength	8ft lbf/in notch	BS 2782 306A
(1.00mm notch)	430 J/M notch	-
Brittle failures	None	-
Brinell hardness	9.5	BS 240
Softening point	144°C	BS 2782 102D
Co-efficient of linear expansion	11 * 10 ⁵ per deg C	-
Surface resistivity	>10 ¹⁵ Ω	BS 2782 203A
Volume resistivity	>10 ¹⁶ Ω cm	BS 2782 202A
Electrical strength	19kv/mm	BS 2782 206B
Specific gravity	0.91 – 0.95	-
Water absorption	0.3 mg (<0.02%)	BS 2782 502D

The above properties are typical and no warranty is given or is to be implied with respect to this information.

Resistant to: aqueous solution of non-oxidising or inorganic compounds, most alcohols, ketones and mineral oils, it is however, affected by concentrated solution of oxidising agents, ethers, esters, chlorinated hydrocarbons, some aromatic compounds, petrol and paraffin.