THOMSON BROS. (NEWCASTLE) LIMITED

Mylord Crescent Camperdown Industrial Estate Killingworth Newcastle upon Tyne NE12 5UJ
e-mail: enquiries@thomsonbros.co.uk website: www.thomsonbros.co.uk
Tel: 0191 2160397 Fax: 0191 2160527

Thomvac 5285

Two component, polyurethane vacuum casting system for rapid prototyping

Key properties

- Easily pigmented off white system
- High heat resistant HDT 120°C
- High flexural strength
- Simulates PP

Applications / Description

Thomvac 5285 – vacuum grade polyurethane simulates the appearance and physical characteristics of engineering thermoplastic for rapid prototyping. It can be used to produce functional prototype parts suitable for use in all major industrial areas including automotive, aerospace, consumer goods and leisure applications. Its high temperature resistance makes it suitable for many under bonnet applications.

Thomvac 5285 is an off white system with PP like properties and with high temperature resistance.

Product data

Property	Unit	Thomvac 5285 Polyol	Thomvac 5285 Isocyanate
Appearance Colour	visual	Liquid Clear	Liquid Clear
Viscosity at 25°C	m Pa s	1000 – 1400	900 – 1500
Density	g/cm³	1.11 – 1.15	1.14 – 1.18

Processing

Mix ratio	Parts by weight
Thomvac 5285 Polyol	80
Thomvac 5285 Iscocyanate	100

Thorough stirring to ensure uniform dispersion of materials is critical, prior to processing. After the components have been mixed, de-aeration under a vacuum for a few minutes is recommended. Materials should be cast into silicone, polyurethane of epoxy moulds which have been pre-heated to 40-70°C

Hand mixing or manual processing of these materials is not recommended.

If a silicone mould is to be used, compatibility with Thomvac 5285 should be checked. If polyurethane or epoxy moulds are to be used, a mould release agent such as QZ13 will be required. However if parts are to be painted of sprayed a non-silicone release agent should be used.

Typical Properties

Resin/Hardener mix		Unit	Thomvac 5285
Potlife at 40C		mins	10 max
Max. Layer thickness		mm	10
Demoulding time (mould at 40 – 70°C) (Depends on layer thickness)		mins	45

Properties after 1 hour at 70°C, 1hr at 100°C, 2 hrs at 120°C
It is recommended that cast parts with thin wall sections or of large dimension be supported during post cure.

Density	ISO 1183	g/cm³	ca 1.0
Hardness	ISO 868	Shore D	ca 77 - 83
Deflection temperature	ISO 75	°C	ca 120
Impact strength		kJ/m²	ca 8-9
Tensile strength	ISO 527	MPa	ca 40 - 45
Elongation at break	ISO 527	%	ca 28-32
Flexural strength	ISO 178	MPa	ca 50-60
Flexural modulus	ISO 178	MPa	ca 1300-1500
Linear Shrinkage (4mm thick)		mm/m	0.1

Storage

The resin and hardeners described in this instruction sheet have the shelf lives shown provided they are stored at 2-40C in a dry place and sealed containers, preferably those in which they are supplied.
Both components are sensitive to humidity and should be used soon after opening or resealed under nitrogen after use. If crystallization of either component occurs, condition overnight in original containers at 60C. Stir to disperse fully and cool at room temperature before use.

Packaging

System	Thomvac 5285 Polyol	Thomvac 5285 Isocyanate
Quantity and Weight	0.8Kg	1Kg