POLYMER GROUP LTD

SOLUTIONS FOR EXTREME ENVIRONMENTS

Product Data Sheet

ENDURATHANE 500/60
RIGID FOAM MOULDING SYSTEM

DESCRIPTION

ENDURATHANE 500/60 is a high density rigid polyurethane moulding foam suitable for handpour or machine application.

Frequently referred to as structural polyurethane foam, the prime characteristic is a sandwich structure consisting of a microscopic cellular core and discreet non-cellular surface layers. The core and surface layers consist of one and the same material and are formed in a single operation (ie not laminates). The properties of these foams can be tailored readily to a wide variety of end-uses by variation of the chemistry of the components or of the processing conditions. This is achieved far more easily than is possible for comparable systems such as thermoplastics.

RECOMMENDED USES

The combination of smooth, hard skins and good mechanical properties at low gross weights coupled with good processing characteristics and wide design freedom, makes **ENDURATHANE 500/60** ideal for applications such as decorative and ornamental mouldings, furniture, wall-panelling (wood grain reproduction) panel doors, ornamental legs, decorative drawer fronts and cupboard doors, and many other conventionally wooden products.

Foaming pressures are very low and moulds are lighter and less expensive than those used for thermoplastic injection moulding.

PHYSICAL PROPERTIES

Components:

Component A (isocyanate)
- Viscosity (20°C).....200cps
- Flashpoint (ASTM D92).....230°C
- Specific Gravity 1.25

Component B (polyol)
- Viscosity (20°C)..... 6200cps
- Specific Gravity 1.08

Reaction Profile:

- Cream Time (20°C).....70 secs
- Rise Time .....120 secs
- Tack Free Time ..... 210 secs

Mix Ratio:

100:100 parts by weight
87:100 parts by volume

Cured Foam:

Density ..... 450 kg/m³

Thermal Conductivity 0.048
(Kcal/m² hr °C)

Compressive Strength (kN/m²)
- Free rise 9500
- Moulded (overpacked 20%).....13000

Closed Cells 90-95%

Dimensional Stability
- 24 hrs @ 100°C .....1 to 2%
- 24 hrs @ -40°C 0%
- 24 hrs @ 70°C/100% RH.....0 to 2%

Water Absorption
(%ASTM D2842).....≤0.5

Water Vapour Permeability .....≤1.0
(Perm-in.....ASTM C-355 @ 23°C)

Dec 2015 replaces Dec 2009

APPLICATION DATA

ENDURATHANE 500/60 can be hand mixed (see separate application bulletin) or machine-applied through 2-component polyurethane application equipment such as ***Glas-Craft Probler*** or similar.

Please consult your representative for advice regarding any equipment application questions you may have.

Equipment: Glas-Craft Probler

Pre-heat: Part A [isocyanate] 45°C
Part B [polyol] 60°C
Hose Temperature: 40-50°C
Optimum temperatures will vary with equipment, substrate temperature and ambient conditions generally.
Check and maintain correct output ratio to ± 2%.
Ensure metering is accurate by regular ratio checks and monitoring of line pressures to gun. Operator must have adequate product knowledge to recognise faulty foam so remedial action can be taken.

Mould Materials:

Endurathane 500/60 may be used with most common mould materials. Substrates must be clean and dry.
Ambient and surface temperatures should be above 15°C (moulds are usually run in the 30-40°C range). **Low temperatures will decrease rise of foam markedly.** Suitable release agents must be used.

Theoretical Yield:

Always check yield and application rates. Adequate allowance must be made for overpacking, especially when cavities are narrow or foam has a long flow path.

1 kg of foam occupies 0.002 m^3.

Handling Precautions:

All chemical materials should be used by trained personnel.

Component A [isocyanate] contains methylenebisphenyldiisocyanate [MDI]. It is an irritant and allergic sensitiser. It is moderately toxic. **Avoid contact with skin or eyes, avoid breathing vapour** and use only in well ventilated areas.

Always wear **eye protection** and suitable **protective clothing.**

Flush splashes to the skin or eyes with copious quantities of water.

Clean up:

Owing to the chemical resistance of polyurethane products it is important to clean up any surplus as quickly as possible. Methyl Proxitol is suitable for general cleaning and methylene chloride can be used as a line flush.

Wear suitable protective clothing, goggles and gloves at all times when cleaning.

Greasing components beforehand assists with contamination removal.

Storage:

Store at temperatures between 15° and 26°C in tightly closed containers to prevent moisture and other contamination. If exposed to moisture Component A will crystallise resulting in line blockages.

Shelf Life: Minimum 6 months.

Dec 2015 replaces Dec 2009

POLYMER GROUP LTD
PO Box 204 106 Highbrook, Auckland 2161, New Zealand
Telephone: 64-9-274 1400 Fax: 64-9-274 1405
Email: sales@polymer.co.nz www.polymer.co.nz