

# ENDURATHANE 3345S FOAM

## POUR-IN-PLACE APPLICATION BULLETIN

### DESCRIPTION:

**ENDURATHANE 3345S rigid polyurethane foam** is a low density, 90-95% closed cell, highly energy efficient, general purpose insulation and buoyancy medium suitable for handpour application.

**ENDURATHANE 3345S** is a fire retarded grade with good self-extinguishing properties, coupled with low thermal conductivity and permeability, good mechanical strength, chemical resistance and dimensional stability. (See product data sheet for additional technical information).

### APPLICATIONS:

#### 1. Insulation:

The low thermal conductivity associated with rigid polyurethane foam makes it an excellent medium for insulation. It is used particularly in refrigerators, cold stores, pipes and ducts, storage tanks, boat freezers and containers.

#### 2. Flotation:

The excellent buoyancy properties of PU foam find application in the manufacture of many water-borne products such as surfboards, skis and windsurfers. It is also widely used to provide flotation in boats, buoys and pontoons. For boating applications in particular, the handpour foam-in-place technique enables otherwise difficult to utilise spaces to be filled with foam thereby providing a greater degree of safety for the vessel and its occupants. This is especially true in boats made of materials with no natural buoyancy tendencies.

### PERSONAL PROTECTIVE EQUIPMENT

When mixing polyurethane foam the following protective equipment is recommended:

- An approved respirator suitable for organic vapours;
- Overalls, gloves, protective eye wear & safety foot wear.

### HOW DO YOU USE IT?

#### 1. Equipment:

You will need: scales, or two identical containers for volumetric measurement. A mixing vessel such as a plastic container which can be disposed of easily. The mixing vessel should be cylindrical in shape to ensure uniformity of mixing. A stirrer with a strong shaft and preferably a circular disc. An electric drill or mounted drill stand is ideal and the agitation speed should be at least 2000 rpm.

#### 2. How Much Do You Need?

The amount of foam required to fill any particular cavity can be calculated by first determining the volume of the cavity to be filled (in litres or cubic metres). One litre requires approx. 33-35g of mixed foam (33-35 kgs per cubic metre). Remember to make allowance for the residue left in your mixing container but guard against "over-packing" as this may place undue pressure on the sides of the cavity being foamed. Having said that, if there are narrow gaps you will need to over-pack (add extra material) to get the foam to flow around restrictions and fill correctly. Ensure the item is strong enough to withstand the pressure build up or adequately brace.

#### 3. Mixing Instructions:

- The required ratio of Component "A" to Component "B" is 1:1 by weight or volume.
- Measure the required amount of Component "A" and Component "B".
- Add Component "B" to Component "A" and mix the two components rapidly for 30 secs at a minimum of 2000 rpm stirring vigorously top to bottom as well as in the horizontal plane (you will have approx. 45 secs before the material begins to 'cream'). After mixing immediately pour into the cavity to be foamed. Do not scrape the sides of the container as unmixed material may be present.
- The foam will continue to rise for approx. 2-3 mins and should be tack free in 4-5 mins. Final properties are attained after 24 hours.

**Effect of Temperature:**

The lower the ambient temperature the denser the foam produced with a slower reaction rate leading to a powdery surface. Increasing temperatures lead to lower densities and faster reaction rates which reduce surface powderiness. Cold substrates, especially metal can kill the reaction by conducting away heat as it is produced by the reactants.

**N.B. In general foaming should only be carried out in an ambient temperature range of 15-22°C.**

**Substrates:**

**Endurathane 3345S** may be applied to most surfaces. Substrates must be clean and dry.

**Ambient and surface temperatures** should be above 15°C.

**Theoretical Coverage:**

Always check yield and application rates at start of job and then regularly to ensure product usage is as expected. Similarly adequate allowance must be made for overpacking, especially when cavities are narrow or foam has a long flow path.

1 kg of foam occupies 0.030 cu. m [0.600 sq.m @ 50 mm] applied under ideal conditions [1 sq.m = 1.65 kg @ 50 mm].

**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.

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

Greasing components beforehand assists with contamination removal.

**Health and Safety Precautions:**

**All chemical materials should only be used by trained personnel.**

Refer to product material safety data sheet for more health and safety information.

**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.

**Component B [polyol]** contains HFO, a volatile blowing agent. It is a mild irritant. In confined spaces it may displace sufficient air to be hazardous. Provide ventilation or use only in well ventilated situations.

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

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

**Employee Physical Examinations:**

All personnel be employed in using these materials should have a complete physical examination prior to beginning spray operations. Periodic check-ups are recommended. Personnel with the following conditions should avoid the using these components:

- Asthma or chronic bronchitis
- Chronic respiratory disorders
- Sensitisation to chemical substances including polymeric isocyanates.

**Storage and Handling:**

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 particulate contamination.

**Shelf Life:** Minimum 6 months.