U RESIN ISF136

U RESIN ISF136 is an Integral Skin Polyurethane Foam product with a free rise density of 136 kg/m3. This product contains no CFC's or HCFC's and is environmentally friendly foam that has no ozone depleting potential.
This system is suitable for mouldings articles where skinned foam is required. This product can be pigmented.

The system can be manually drill mixed (@ a minimum speed of 2000 rpm) but it is preferable to process through a plural component polyurethane dispensing machine.

PROFILE:

	POLYOL	ISOCYANATE	MIXED
Colour	HAZY WHITE	BROWN	
Mix Ration (by Weight)	100	37	
Mix Time (seconds)			15
Cream Time (seconds)			24
Gel Time (seconds)			40
Specific Gravity	1.07	1.2	
Tack Free Time (seconds)			75
Free Rise Density (kg/m3)			136
Brookfield Viscosity (cps) @ 20°c	725	145	

* Note: The colour of polyol will change if pigmented. Laboratory results based on hand-mix @ 20°C.

MIXING PROCEDURES

To produce a high quality skinned foam, it is essential that the following procedures be carefully followed.

1. The Isocyanate should be accurately weighed into a suitable container. Suitable containers include metal or plastic. Ensure the containers are clean and dry.

2. The Polyol should be mechanically stirred before removing any material. The Polyol should be accurately weighed into the same container. The reaction between the two products essentially begins immediately when the two products meet.

3. The product should be mixed with an electric drill to which a paint mixer has been attached. It is essential that the drill is capable of mixing at least at 2000 rpm. A slower speed will produce poor quality foam.

4. The product should be hand mixed for typically 5 seconds. The mixing time will depend on a variety of factors including: Cream time of the material: The product should be mixed and poured into the mould before the cream time has been reached. The temperature of the poly/iso: If ambient and chemical temperatures are too high then the cream time is much faster.
Batch size: Generally a larger batch size will react faster than a smaller batch.

MOULD TEMPERATURE
Ideally the mould temperature should be near 30 - 40 °C, essentially the higher the mould temperature the less skinning is achieved. The temperature should be varied to give the optimal skin.

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MOULDS

FABRICATION: Moulds can be fabricated from a variety of substances including metal, plastics and fibreglass. A mould release, such as wax based release agent must be used before each moulding.

CONDITIONING: When using a new mould, some release agent conditioning of the mould surface maybe necessary. To do this, 2-3 coats of release agent should be applied one after another, with conditioning of the mould at 30-40°C between each coat to allow adequate penetration of the release agent into the mould surface and to allow sufficient time between each coat for solvent evaporation.

VENTING: These foams generate pressure inside a mould. It is important therefore to incorporate a few small (about 1 mm) vent holes or engineer controlled venting through the seams of the mould. This will allow contained air and gas to escape. It is important however, to only allow a minimal amount of material to escape. If a large amount escapes either through the vent holes or through the part line of the mould, it will cause large voids below the skinned surface.

POSITIONING OF MOULD: If a void free space is required it may be necessary to angle the mould in such a way that the air vents are at the highest point.

POST CURE

U RESIN ISF136 foam will cure at ambient temperatures, providing of course that these temperatures are over 15°C.

NOTE: The foams when de-moulded can still be “green”. It should therefore be handled carefully so as not to introduce a permanent set.

HANDLING OF RAW MATERIALS

U RESIN ISF136 Isocyanate - ISF136 Isocyanate is MDI and it is a liquid at room temperature, hence:

1. Store in a dry environment, i.e. exclude moisture by blanketing with nitrogen.
2. Store between 20 - 35°C. If the temperature falls below 15°C, the product may crystallise.
3. As with all isocyanates, good industrial practice should be employed, e.g. avoid contact with eyes, skin and clothing. Avoid breathing in vapours.
4. Iso drum after opening should be purged with dry nitrogen.

U RESIN ISF136 Polyol - Presents no particular health hazards.

The recommended storage temperatures are 18-25°C, which will give a normal shelf life of 3 months. At elevated temperatures problems may arise with pressure build-up within the drums. When opening these drums extreme care must be exercised in releasing the internal pressure. Ensure that the Polyol is stirred thoroughly before decanting, as the components of this Polyol will separate on standing. It is recommended that the Polyol be mixed periodically through a day’s production also. Polyol drum should be purged with dry nitrogen after opening. Ensure the container of Polyol is well sealed when not decanting as there will be a lost of blowing agent.