

# PAREX Render Systems and Façade Solutions

## TECHNICAL INFORMATION SHEET

### Parex DPR Technology and Do Silicone Enhanced Products Really Work?

#### **Parex use what is termed as DPR Chemistry:**

The DPR property is a special chemical characteristic of the specific acrylic polymers we make acrylic finishes with. Most acrylic polymers do not have this special characteristic, but the ones we use do. All Parex brands of acrylic finishes, including elastomeric finishes, use this chemistry and due to the nature of these types of renders will have a small amount of silicone within its composition.

The dirt-pick-up resistance (DPR) is created by exposure of the finish to daylight. The special chemical characteristic of the polymer responds to the natural ultraviolet in the daylight to which the outer surface of the polymer is exposed. The ultraviolet causes the polymer to cross-link. Cross-linking is a chemical process whereby the separate polymer molecules form chemical bonds between each other. The result is a harder polymer than without the cross-linking. The increased hardness does not extend into the finish beyond its outer surface though. That is important because if the entire thickness were harder, the finish would have less flexibility. The Parex finish has both desirable properties, softer and therefore more flexible throughout the thickness beneath its surface, but harder and more resistant to dirt particle embedment at its surface. DPR products are termed as being 'Weatherproof' and not 'Waterproof'. This is because a 'Waterproof' render is just that and would stop water penetration but at the same time would also trap moisture within the structure. Parex DPR 'Weatherproof' finishes provide a breathable but weatherproof surface, preventing water ingress but allowing the building to 'breathe'.

#### **Is DPR affected by moisture preventing it from drying during winter?**

All acrylic / silicone products such as DPR set by evaporation of the liquid from it. To do this effectively they rely on dry, warm conditions primarily to do so. During winter, the weather conditions are less favourable, namely damp or wet thus the materials can significantly longer to dry, even several days. The curing process can be enhanced by adding **Parex Accel Dry** into the material. This can assist the drying process which can reduce the drying time by approximately a third.

However for this to work, the ambient and substrate temperature needs to be +4°C and rising and the DPR materials need to be stored indoors in a frost free environment. If it does freeze then a minimum of 24hours of thawing is required before use.

#### **DPR Technology**

**100% Acrylic Polymer** – UV-Resistant, Non-chalking, Non-yellowing

**Highly Vapour Permeable** – "Breathable" finishes

**Highly resistant to Algae and Fungi attack** – longer lasting with less maintenance

**Marble Aggregate** – The finish does not rust – Stable colours

**Unlimited colour options**

#### **The following is factual information about the performance of silicone enhanced products.**

##### **1. Silicone: Real Advantages?**

- Water beading: you need 1% of silicone or more to achieve this!

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- Using 1% of silicone increases the cost of a bucket or bag by about 30% or more.
- Other than water beading on the surface there are no other advantages found.

## 2. Silicone: Mildew & Algae Protection?

- Does Silicone have any effect on mildew or algae protection?
- No, mildew & algae protection comes from the additions of biocides at the manufacturing plant.

## 3. Silicone: Surface Performance?

- Silicone has little or no effect on permeability. Permeability is affected mostly by levels of polymer and texture.
- Silicone provides no improvement in dirt pick up resistance and may in fact show an increase in surface dirt accumulation over time.

## 4. Silicone: Long term surface performance?

- Silicone enhanced finishes or coatings show a higher rate of surface chalking than non-silicone products.
- Increased levels of silicone can increase cracking of External Insulated Façade System finish over time. - A 45-month study of top coat finish with a higher % of silicone showed surface cracking as opposed to finish without silicone.

## 5. Can Silicone Enhanced Finishes & Coatings be Re-coated?

- Yes, with the small percentage (1%) of silicone added to finishes and coatings, re-coating with an acrylic coating is not a problem.

## Conclusion

- Silicone enhanced finishes are generally perceived to have more to do with marketing benefit rather than actual product benefit.
- Parex DPR (Dirt Pick-up Resistant) Finishes & Coatings are durable, weatherproof, strong materials manufactured to give attractive appearance and a long durable service. The desired colour of the finish is manufactured into the product and does not require painting for many years.
- The products have been tested in the USA over many years, have full European Technical Approvals, British Board of Agrément and Irish Agrément certifications.

For additional information or other Technical Information Sheets, please visit our Web site link

[http://www.parex.co.uk/Render\\_Systems/Technical\\_Information\\_Sheets](http://www.parex.co.uk/Render_Systems/Technical_Information_Sheets)

Or for product datasheets contact;

Parex Ltd

Holly Lane Industrial Estate

Atherstone

CV9 2QZ

Tel: 01827 711755

[www.parex.co.uk](http://www.parex.co.uk)