PPG Protective and Marine Coatings is dedicated to the development, manufacture and supply of coatings to meet the very challenging needs of specific industries. With a heritage of outstanding expertise in coatings technology and decades of international investments in research and development for the protective coatings market, no company could be better placed than PPG Protective and Marine Coatings to meet the fast-changing global challenges of this technically demanding sector.

Systems

Typical systems for new construction of SigmaDur™ 1800 are:

System 1

- **SigmaZinc™ 109 HS, 150 microns**
- **SigmaDur™ 1800, 75 microns**

Tested and meets ISO 20340, Norsok M501 and ISO 12944 C5-I high.

System 2

- **SigmaZinc™ 158, 75 microns**
- **SigmaDur™ 1800, 75 microns**

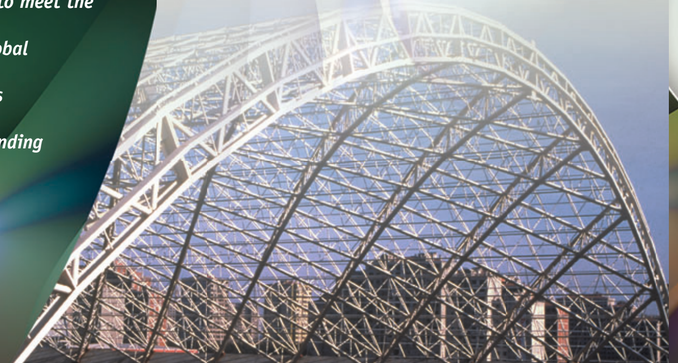
Tested and meets ISO 20340 and Norsok M501.

System 3

- **SigmaCover™ 805, 150 microns**
- **SigmaCover™ 805, 150 microns**
- **SigmaDur™ 1800, 75 microns**

Tested and meets ISO 12944 C5-I high.

SigmaDur™ 1800 meets Florida testing according to ACQPA for all prescribed colours.



PPG Protective and Marine Coatings

**PPG Protective and Marine Coatings brings unrivalled levels of experience and expertise in coatings technology through our expanding global supply and distributor network.
We understand our customer needs and the challenges they face and respond quickly with effective economic solutions, working closely to develop the products they need.**

Formulations that can be applied more easily, resist the elements better and reduce overall environmental impact in compliance with both local and international standards.

With in-depth knowledge of the working realities facing the industries we supply, our Technical Service Representatives offer an unsurpassed perspective on the coatings options that can help your industry to function optimally, maximising technical performance and minimising expensive down time.

SIGMA COATINGS

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PROTECTIVE COATINGS
solutions that cover your needs

SIGMA COATINGS

SIGMADur™ 1800

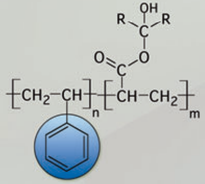
The next generation highly durables beyond acrylic polysiloxane

PPG Protective & Marine Coatings

The SigmaDur™ 1800 *is not 'just' a polyurethane*

What is it and Why?

To answer these questions we firstly have to look at the building blocks of the binder of every traditional polyurethane. The binder system forms the heart of every coating system. A binder of every conventional polyurethane consists of a styrene and acrylate moiety in a particular ratio.



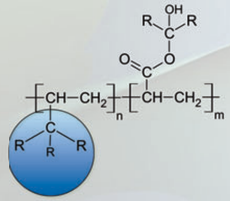
Styrene 30-40 %

Acrylate 60-70 %

Unfortunately the styrene in this building block is the part where we can find the weakness when it is exposed to ultraviolet (UV), which is part of daylight. Styrene is a weakness when binder is exposed to UV because of the following reasons:

- **Reduces gloss retention over time**
- **Results in yellowing and discoloration over time**
- **Results in chalking over time**

PPG Industries has been able through "state of the art" technology to eliminate the weakness. The building block consists of branched vinyl and acrylate.



Branched vinyl 30-40 %

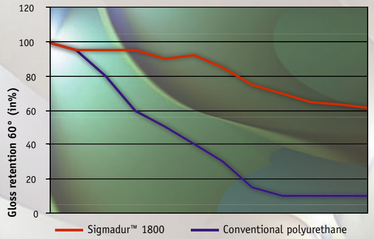
Acrylate 60-70 %

The binder is **styrene free**, which will result in a longer durability when exposed to UV:

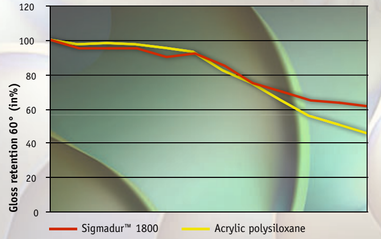
- **Enhanced gloss retention over time**
- **Reduced discolouration over time**
- **Enhanced chalking resistance over time**

This polymeric polyurethane technology is embedded in SigmaDur™ 1800. PPG Industries is the only manufacturer to make this binder through its in-house developed Polymeric polyurethane technology.
Test results show that when SigmaDur™ 1800 is exposed to accelerated testing in a WOM (ISO 4892-2) it outperforms a conventional polyurethane.

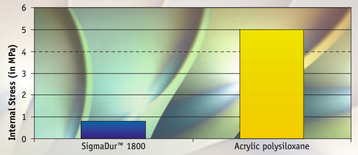
As can be seen from the WOM exposure SigmaDur™ 1800 outperforms a conventional polyurethane over time.



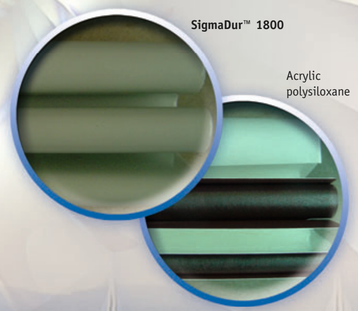
Because SigmaDur™ 1800 is a durable finish that is designed for a durability up to 20 years it is in the arena with acrylic polysiloxane. The comparison in accelerated tests (WOM, ISO 4892-2) with conventional polysiloxane is as following.



Generally acrylic polysiloxane technology has not proved to provide a risk free technology for 15-20 years service. When the build up of internal stress (ASTM D6991-05) of SigmaDur™ 1800 has been determined and compared with acrylic polysiloxane available in the market the following has been observed.



SigmaDur™ 1800 builds up 6 times less internal stress than an acrylic polysiloxane that is available in the market and hence is less sensitive for over application and thus cracking. This can clearly be observed from mandrel testing (ISO 1519).



Benefits of SigmaDur™ 1800

- **Reduced downtime of your asset due to less maintenance and two-coat options**
- **Reduced maintenance cost due to longer durability**
- **Long term durability up to 20 years**
- **Outperforms conventional polyurethane and acrylic polysiloxane**
- **Better flexibility than conventional acrylic polysiloxane**
- **More cost effective than acrylic polysiloxane**
- **Availability in the colours of your choice**
- **Unlimited recoatability**
- **High solids and VOC compliant**

SIGMADur™