TECHNICAL INFORMATION

# SWARCOGLOW AQUALINE System

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Road Marking Systems

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# SWARCOGLOW AQUALINE System

Art.-No.: 8179016 white, SWARCOGLOW AQUALINE Primer
Art.-No.: 8171111 yellow-green, SWARCOGLOW AQUALINE Paint
Art.-No.: 8170000 transparent, SWARCOGLOW AQUALINE UV-Clear Varnish

Version: 2022-08-02



**Important Information:**
Please consider our General Terms and Conditions and the general notes of the Technical Information Sheet! No liability is accepted for any errors! The information is provided to our best knowledge and experience. This information is, however, no warranty for any properties of the material. We provide this information without obligation, also regarding the rights of third parties. The user has to make sure that the material is appropriate for the respective application.

# 1 Main characteristics / Fields of application

**SWARCOGLOW AQUALINE System...**

- is a three-layer marking system consisting of a waterborne SWARCOGLOW AQUALINE Primer, SWARCOGLOW AQUALINE Paint and a SWARCOGLOW AQUALINE UV-Clear Varnish and belongs to the group of waterborne one-component paints
- can be incited by UV radiation as well as by white daylight or artificial light. In the dark SWARCOGLOW AQUALINE Paint is visible through its afterglow properties (emission of light). The special afterglow pigments are free of phosphor, radioactive substances or other toxic chemicals
- is especially suitable for near-ground optical safety guidance system and identification of emergency exit routes in staircases, parking garages, factories, shopping centers, tunnels etc., in case of a power blackout or fire with formation of smoke (product is not suitable for areas with car traffic impact; applicable on floors with low pedestrian traffic volume only)
- supplements existing emergency light systems which are invisible in smoke
- its good luminescence does not only show the direction of evacuation routes, but also makes staircases, obstacles, doors etc. better visible
- especially suitable for vertical applications
- developed for indoor locations with intensive lights; the SWARCOGLOW AQUALINE Paint should be applied close to those light sources
- suitable for bituminous surfaces (e. g. mastic asphalt, asphaltic concrete), not suitable for floor coatings
- tested and approved at Federal Institute for Materials Research and Testing (BAM, Berlin) according to DIN 67510 part 1 (longtime afterglow products)
- suitable for air spray technique (for airless machines: tests are recommended)

# 2 Technical Data

| Three-layer system | first layer | second layer | third layer |
|---|---|---|---|
| **Product** | SWARCOGLOW AQUALINE Primer | SWARCOGLOW AQUALINE Paint | SWARCOGLOW AQUALINE UV-Clear Varnish |
| **Art. No.:** | 8179016 | 8171111 | 8170000 |
| **Standard colors** | white | yellow-green | transparent |
| **Density** | 1.61 kg/l +/- 0.1 | 1.24 kg/l +/- 0.1 | 1.04 kg/l +/- 0.03 |
| **Thinner** | Add max. 2% water for optimizing spray properties | | |
| **Thinner for cleaning** | water | | |
| **Next application after** | approx. 5 - 15 min. (must not be sticky but dust-dry) | approx. 10 - 25 min. (must not be sticky but dust-dry) | approx. 10 - 15 min. |
| **Drying time / Trafficability** | / | / | approx. 1 hour after last application (must not be sticky)* |
| **Wet layer thickness to be applied** | approx. 200 µm<br>watch out for even and complete coverage | min. 100 µm - max 600 µm depending on requested afterglow time span. Thicknesses of more than 300µm need to be applied in 2 steps | min. 60 µm – max. 100 µm<br>apply in two application steps |
| **Theoretical consumption** | approx. 0.322 kg/m² (0.20 l/m²) | approx. 0.112kg/m² (0.086 l/m²) to approx. 0.74 kg/m² (0.5 l/m²) | approx. 0.063 kg/m² (0.066 l/m²) to approx. 0.104 kg/m² (0.108 l/m²) |
| **Standard packaging** | 1.0l - can<br>5.0l - plastic container<br>10.0l - plastic container | 1.0l - can<br>5.0l - plastic container<br>10.0l - plastic container | 1.0l - can<br>5.0l - plastic container<br>10.0l - plastic container |
| **Identification** | The regulations and instructions concerning appropriate transport, handling, storage, first aid and measures, toxicology and ecology are stated in detail in our material safety data sheets! The instructions stated on the product label and in the MSDS must be followed. | | |

| | |
|---|---|
| **Storage stability** | 6 months; in sealed original packaging;<br>protect from frost and direct sun light |
| **Processing temperature** | min. +10°C |
| **Surface temperature** | +10°C to +45°C |
| **Relative humidity** | max. 75% (dew point spreadsheet has to be regarded) |
| * In general, the markings' stability must be checked before exposing it to traffic impact | |

# 3 Efficacy of afterglow markings

The effectiveness of photoluminescent markings is influenced by the following factors:

- effective and sufficiently strong light sources that ensure good charging (excitation) of the photoluminescent system by their spectral range and illuminance level
- by the charging time
- the applied layer thickness of the afterglow product
- the quality of the primer as a contrast for the afterglow product
- by the quality / intensity of the afterglow pigment itself

Optical properties tested at BAM* - SWARCOGLOW AQUALINE System according to DIN 67510-1:

| **sample**<br>**wet film thickness µm** | | | | **luminance mcd / m² after**<br>**1 min** | **10 min** | **30 min** | **60 min** | **decay time**<br>**in min.** |
|---|---|---|---|---|---|---|---|---|
| | **first layer** | **second layer** | **third layer** | | | | | |
| Test June 2005 | **400** | **600** | **60** | **1506** | **194** | **63** | **28** | **2430** |

* BAM – Bundesanstalt für Materialforschung und –prüfung (Berlin): Federal Institute for Materials Research and Testings

** decay time until luminance amount to 0,3 mcd /m²

# 4 Processing instructions

## 4.1 Preparation of material and application technique

All products of the SWARCOGLOW AQUALINE System must be homogeneously stirred in their original container before processing by using an appropriate stirring device. The cleaning must occur with water before the material has dried completely. The application and drying properties of the material depend on temperatures of air, material and surface. Proper storage conditions may improve application conditions.

The theoretical material consumption is stated in the table "Theoretical material- and drop-on consumption" on our website.

The exact machine adjustments have to be done according to the manufacturer's instructions. The Layer thickness has to be even to get consistent afterglow properties.
**Attention:** All machine parts (tank, pumps, spray devices) must be made of stainless steel. The machine must be perfectly clean, remaining solvent paints or solvents may cause damage in combination with waterborne paints.

## 4.2 Optimizing application properties

SWARCOGLOW AQUALINE products are ready for use upon delivery and usually do not require thinning with water. Adjust spray equipment first before considering diluting the paint!

It is possible to optimize the material's spray properties by adding up to max. 2% of water as thinner. Never mix waterborne paint with organic solvents!

# 5 Surfaces / pretreatment

## 5.1 General information

The surface must be dry, clean and free from grease, oil and loose gravel and other contaminations. The surface and potentially existing old markings must be checked for their carrying capacity and compatibility with the material to be applied. In case of doubt, test applications and adhesion tests are required. Ideally, old markings should be removed with appropriate mechanical procedures. Dark surfaces need a white primer for improving the effectiveness of the SWARCOGLOW AQUALINE System.

**Attention**: The SWARCOGLOW AQUALINE System is not appropriate for large area applications on bituminous surfaces (e. g. playground, sportsground, cycle path or similar).

## 5.2 Concrete and cement-bound surfaces

The pavement components of new concrete surfaces that prevent good bonding (fine mortar layers, concrete slurries) must be appropriately removed (e. g. with high pressure waterjet, fine mill cut, or similarly effective methods). The humidity of the concrete must not exceed 4% during the marking process.
We advise against applying waterborne marking systems onto steel fiber concrete.
When applying the paint on concrete or cement-bound surfaces or interlocking concrete pavement, the formation of bubbles is likely to occur. In order to prevent bubble formation, the concrete should be pretreated with SWARCOGLOW AQUALINE Primer blended 1:1 with water. The wet film thickness should amount to approx. 150µm. Once dried, a second, undiluted layer can be applied. The moisture of the concrete must not exceed 4% during the marking process.

## 5.3 Bituminous surfaces

Any loose components such as chippings must be removed. Flux oils of new bituminous surfaces are detrimental to bonding of markings and may lead to discoloration. Since these oils are not removable mechanically, the surface should be applied with SWARCOGLOW AQUALINE Primer. After a waiting time of 4 - 6 weeks test markings (tests for adhesive properties and discoloration) are recommended prior to the application of the SWARCOGLOW AQUALINE Paint.

Furthermore, it has to be regarded that new bituminous surface applied inside car parks and industrial buildings are not as well compacted as road asphalt. Therefore, underneath the marking or on the sides of the marking’s cracks / chippings may occur.

## 5.4 Cobbled pavement

Natural, artificial and compound stone pavements are non-static surfaces. Basically, they are not suitable for the application of SWARCOGLOW AQUALINE System. No guarantee is given in case of crack formation, chippings caused by the movement of pavement parts, poor marking bonding (e. g. natural or artificial stones), penetration of moisture, wear of the marking. Test markings are obligatory.

## 5.5 Floor coatings

The SWARCOGLOW AQUALINE System is not suitable for floor coatings. The SWARCOGLOW 2-C Paint System or the SWARCOGLOW 2-C Cold Plastic should be used. Test markings are mandatory on these surfaces.

### 5.6 Other surfaces

Inside buildings further surfaces are encountered (e. g.: PVC, wood, chipboards). Test markings are mandatory on these surfaces. The SWARCOGLOW 2-C Paint may be an option. Metal surfaces are not suitable for SWARCOGLOW AQUALINE Paint.

# 6 Application techniques

With air spray machines (tests are necessary when using airless machines) or manually with hand spray gun or roller.
The application of SWARCOGLOW AQUALINE Paint has to be conducted in the following sequence:

1. **SWARCOGLOW AQUALINE Primer, white**

   apply evenly

2. **SWARCOGLOW AQUALINE Paint, yellow-green**

   apply evenly, provides for the afterglow effect, depending on desired thickness: 2 applications may be necessary

3. **SWARCOGLOW AQUALINE UV-Clear Varnish**

   protects SWARCOGLOW AQUALINE Paint against dirt and wear and prolongates lifetime

The above-mentioned layer thicknesses and the number of stated spray operations have to be applied in order to get optimal afterglow properties.

SWARCOGLOW AQUALINE Paint thickness can be between 100 µm to max. 600 µm depending on requested afterglow effect. Regard waiting times stated in the spreadsheet.

The UV-Clear Varnish needs enough time for drying. Otherwise, the varnish’s surface may get soiled.