



# DOCUMENTATION OF MANAGEMENT, OPERATION AND MAINTENANCE

## Phosphorescent Safety way guidance systems (onshore)

### ISO3926, ISO16069, ISO17398

Fluor-Lux is a supplier of safety signs and safety way guidance systems (SWGS systems) and connected solutions - for offshore and onshore facilities. We are certified according to current regulations to ensure delivery of safe and secure products.

#### PRODUCT INFORMATION

1. A SWGS system is complex and may consist of several components - from phosphorescent strips to supplementing signs, as directional indicators, fire signs and evacuation plans. The whole SWGS system shall give users consequent and logic information for efficient evacuation to a safe place. SWGS systems shall be designed, so that the visual information is in contrast to the surroundings for as long as it is dimensioned for evacuation. The components of SWGS shall be installed as continuously and uninterruptedly as possible in the evacuation zone. The size and number of supplying signs shall be decided on based on a total risk assessment of the building.

The low location lightning system (LLL) is the central part of an SWGS system. All signs, as part of the LLL system, shall hold the same quality and luminance as the LLL strip itself. The components of an LLL system comprise guidance lines at low location (strips), directional indicators, marking of the escape route doors and escape route signs.

2. Our products are in compliance with current standards and regulations. More information, page 2.

#### INSTALLATION

1. When installation of the SWGS system is complete, a luminance test shall be performed for the whole system, at the place, under normal conditions, according to NS3926-1:2017. ch 7.2
2. The width of the phosphorescent strips shall also be measured at the same test points as for luminance and conform to the luminance decay time in NS3926-1:2017, ch 7.2.
3. We refer to NS3926-2:2017, ch 4.4. for measuring-equipment of luminance and illuminance.
4. A complete report, for each test point, shall be delivered for the whole system. The report shall refer to NS3926-1:2017, and answer to ch. 8.6 in this standard. All results are to be logged for later inspection.
5. It shall be documented, by certified body, that the project complies with the fire classification for the current building.

#### MAINTENANCE

1. By repairs and replacements of phosphorescent components, the new products shall be of at least the same quality as the originals.
2. Cleaning to be performed according to visual check records. Cleaning with "normal" detergents is recommended, as soap and water (avoid chemicals). External light sources shall also be cleaned to secure optimal charging of the SWGS system.

#### INSPECTION AND CONTROL

1. The owner of the building shall secure that inspection and control is performed and documented.
2. The SWGS system shall be visually inspected at least twice a year, and the test-area and the results recorded. Checkpoints: the need for cleaning, performance of external light sources, missing or damaged phosphorescent strips and signs.
3. Qualified control by certified body shall be performed every 3 years, or more often if recommended as result of normal inspections. The qualified control shall state whether or not the system still conforms with standards and regulations: luminance decay time, external light sources, fire evaluation, project descriptions, implementation/instructions, use/purpose of the building.
4. A copy of technical product information, test results, information about the producer, risk evaluations, maintenance and control records, shall be kept available for maintenance, inspection and control purposes.
5. By change of use/purpose of the building, or by reconstructions, the SWGS system is to be reevaluated and corrected to comply with the new risk assessment.

## PRODUCT TESTS AND QUALITY

PRODUCT: SAFETY WAY GUIDANCE SYSTEM		
STANDARDS	TESTS	TESTED BY
ISO17398:2004	Flame retardant test according to: IEC60092-101, section 2.28.2, type 60202 RGB-M-F yellow-green.	RISE/SP, Sweden
ISO17398:2004	Weather resistance test according to ISO4892-2.	RISE/SP, Sweden
ISO17398:2004	Salt spray and corrosion resistance according to ISO9227.	RISE/SP, Sweden
ISO17398:2004	Resistance to humidity.	RISE/SP, Sweden
ISO17398:2004	Measurement of photoluminescence according to sub-classification D (strictest classification). Measured before and after aging of samples having been exposed to weather resistance, salt spray and humidity.	RISE/SP, Sweden
ISO17398:2004	Impact resistance test according to IEC60068-2-75.	FluorLux
ISO17398:2004	Wipe resistance test according to ISO105-X12.	FluorLux
ISO15370:2010	Low Location Lightning, measurement of photoluminescence with low stimulation, type 60202 RGB-M-F yellow-green.	RISE/SP, Sweden
DIN67510-1:2009	Measurement of photoluminescence, type 60202 RGB-M-F yellow-green.	RISE/SP, Sweden
ISO17398:2004	Cleaning of product with isopropanol 20 times, with 1 kg press, results in no changes on the product.	FluorLux

PRODUCT: PASTE/GLUE FOR APPLICATION		
PRODUCT	DESCRIPTION	TESTS
SIKAFLEX – 292i	Polyuretan glue/paste, hardens by humidity. Excellent gluing properties and mechanical strength. For application on a broad specter of materials – aluminium, plastic, ceramics, painted surfaces etc. Solvent-free. Application temperatures between 10-40 Celsius. Mechanical removal of hardened product.	Flame retardant - Wheelmark approved

## TECHNICAL DATA LUMINESCENCE

SAFETY WAY GUIDANCE SYSTEMS		TEST MATERIAL	COMMENTS	CLASSIFICATION	2 min	10 min	30 min	60 min	Decay time to 0,3 mcd/m <sup>2</sup>
REQUIREMENT	NS3926:2017 NORWEGIAN REQUIREMENTS FOR BUILDINGS AND CONSTRUCTIONS (ONSHORE)		Requirements after installation	Fireclass 1	-	-	10	-	-
				Fireclass 2 and 3	-	-	-	10	-
			Lab test requirements	-	-	140	-	20	1800 min
TEST	Test according to DIN67510-1:2009	60203 RGB- M-F yellow-green		Approved	1252	257	76,3	34	2490 min

