



NZEB_LAB

LMR: : Durability of materials and coatings under natural aging conditions (atmospheres with different corrosivities)

DESCRIPTION OF THE INFRASTRUCTURE

Name of the infrastructure: LMR - Laboratory of Materials and Coatings

Location (town, country): LNEG, Polo do Lumiar, Lisbon, Portugal

Web-site:

Legal name of the organization operating the infrastructure: LNEG

Location: Building E

SERVICE PROVIDED

Service Name: Durability of materials and coatings under natural aging conditions (atmospheres with different corrosivities)



Associated equipment:

Equipments/sensors	Lumiar_Lisboa	Sines
Temperature and Relative humidity	THIES CLIMA, Model 1.1005.51.912	THIES (Model 1.1005.54.000)
Wind	THIES CLIMA, model 4.3721.10.012	Gill Instruments, p.n. 1405-PK-021
Precipitation	THIES CLIMA, modelo 5.4032.35.007	R. M. Young, model 52203
Global solar irradiation	PH.SCHENK Type 8101	Kipp&Zonen, p.n. 0338920-002
Global radiation UV	Kipp&Zonen CUVB Part nº 0364900-00 nº 4607	Kipp&Zonen CUVB
Radiation UVB	LSI DPA821	LSI DP A821
NOx	X	Environment AC32M

Methods:

Exposure of materials and coatings in two Outdoor Exposure Testing (OET) Sites: LUMIAR/LISBOA-PORTUGAL with corrosivity C2-C3 (low-medium corrosivity) and SINES-PORTUGAL with corrosivity C5-CX (very high-extreme corrosivity).

The construction of these two OET sites followed the standards ISO 8565 and ISO 2810 and they are equipped with sensors for measurement of temperature, humidity and global solar radiation. Determination of chloride deposition rate is performed by the wet candle method and determination of sulfur dioxide deposition rate on lead dioxide sulfation plates according to ISO 9225. The determination of corrosivity is performed according to ISO 9223 and ISO 9226.

Deliverables:

Evaluation of durability of materials by exposure under natural aging conditions (atmospheres with corrosivity C2-C3 (low-medium corrosivity) and with corrosivity C5-CX (very high-extreme corrosivity)).

Testing period (weeks/year): Depends on the aging test duration and on number of samples to be tested

Costs:

Cost depends on samples dimensions and testing time. The cost is proportional to the testing time and is not proportional to the number of samples. A larger number of samples reduces the price of the service but also depends of availability in test racks.

Test site (Lumiar/Lisboa) (50€/sample/year) (100x100mm); Test site Sines (90€/sample/year) (100x100mm)

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