TEST Reg.no. 25

DANISH TECHNOLOGICAL INSTITUTE

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Test Report

Material: The test specimens of Norway spruce *(Picea abies* (L.) Karst.) were prepared according to EN 927-5:2006 by the Danish Technological Institute.

The test specimens were treated according to assignor's directions:
AQUATOP 2600 RAL 9010,: 2600-82, spraying 185 g/m^2 ±10% corresponding to 167- 204 g/m^2 .

Method: EN 927-5:2006. "*Paints and varnishes - Coating materials and coating systems for exterior wood - Part 5: Assessment of the liquid water permeability*".

Period: The testing was carried out from 14-04-2014 to 23-06-2014.
Water permeability test took place from 20-06-2014 to 23-06-2014.

Result:

Test panel:	**Average (min-max)**	
Wood density (12% MC)	486(468-497)	kg/m³
Wet film AQUATOP 2600 RAL 9010	184(170-193)	g/m²
Dry film thickness	53(37-65)	µm
Water absorption after 72 hours, average	175(162-196)	g/m²
- standard deviation	14.3	g/m²
- coefficient of variation	8.2	%
Reference panels (test of sealer):		
Wood density (12% MC)	444(430-456)	kg/m³
Water absorption after 72 hours, average	7.6 (6.2-9.3)	g/m²

Conclusion: According to EN 927-2:2006*," Paints and varnishes - Coating materials and coating systems for exterior wood -Part 2: Performance specification*", the tested system performs as "Stable", regarding water absorption (≤ 175 g/m²).

Validity: Water absorption after 72 hours on reference specimens was ≤ 30 g/m². The test is valid.

Storage: The samples will be destroyed after 6 months, if nothing else has been agreed in writing.
Terms: The test has been performed according to the attached enclosed conditions, which are according to the guidelines laid down by DANAK (The Danish Accreditation). The testing is only valid for the tested specimen. The test report may only be extracted, if the laboratory has approved the extract.

30-06-2014, Danish Technological Institute, Wood Technology, Taastrup
Revised 26-08-2014. This report replaces all previous for this sample

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Co-reader

Appendix 1. Surface coating and results

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EN 927-5:2006. Paints and varnishes - Coating materials and coating systems for exterior wood - Part 5: Assessment of the liquid water permeability.

Substrate: Norway spruce, sapwood (*Picea abies* (L.) Karst.).

Tested system:

System:

Coat	Trade name	Type	Density (g/m^2)	Application method and date	Recommended amount (g/m^2)
1	AQUATOP 2600 RAL 9010	Top coat	1.204	Spraying 14-04-2014	167-204

Results:

Test panels						
Panel no.	301		302		303	
Density (kg/m³)	493		468		497	
Application data						
Coat 1 (g/m²)	193		170		188	
Water absorption						
Panel part	A	B	A	B	A	B
Absorption (g/m²)	170	163	189	196	162	168
Average (g/m²)	**175**					
Std. dev. (g/m²)	**14.3**					
COV (%)	**8.2**					
Reference panels (test of sealer)						
Panel no.	1		2		3	
Density (kg/m³)	430		446		456	
Water absorption						
Panel part	A	B	A	B	A	B
Absorption (g/m²)	6.2	7.3	9.3	7.3	9.3	6.2
Average (g/m²)	**7.6**					
Std. dev. (g/m²)	**1.4**					
COV (%)	**18.6**					

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The general conditions pertaining to assignments accepted by Danish Technological Institute shall apply in full to the technical testing and calibration at Danish Technological Institute and to the completion of test reports and calibration certificates within the relevant field.

Danish Accreditation (DANAK)

DANAK was established in 1991 in pursuance of the Danish Act No. 394 of 13 June 1990 on the promotion of Trade and Industry.

The requirements to be met by accredited laboratories are laid down in the "Danish Agency for Trade and Industry's ("Erhvervsfremme Styrelsens") Statutory Order on accreditation of laboratories to perform testing etc. and GLP inspection. The statutory order refers to other documents, where the criteria for accreditation are specified further.

The standards DS/EN ISO/IEC 17025 "General requirements for the competence of testing and calibration laboratories" and DS/EN 45002 "General criteria for the assessment of testing laboratories" describe fundamental criteria for accreditation. DANAK uses guidance documents to clarify the requirements in the standards, where this is considered to be necessary. These will mainly be drawn up by the "European co-operation of Accreditation (EA)" or the "International Laboratory Accreditation Co-operation (ILAC)" with the purpose of obtaining uniform criteria for accreditation. In addition, DANAK draws up Technical Regulations with specific requirements for accreditation that are not contained in the standards.

In order for a laboratory to be accredited it is, among other things, required:

- that the laboratory and its personnel are not subject to any commercial, financial or other pressures, which might influence their technical judgement
- that the laboratory operates a documented quality system
- that the laboratory has at its disposal all items of equipment, facilities and premises required for correct performance of the service that it is accredited to perform
- that the laboratory management and personnel have technical competence and practical experience in performing the service that they are accredited to perform
- that the laboratory has procedures for traceability and uncertainty calculations
- that accredited testing or calibration is performed in accordance with fully validated and documented methods
- that the laboratory keeps records, which contain sufficient information to permit repetition of the accredited test or calibration
- that the laboratory is subject to surveillance by DANAK on a regular basis
- that the laboratory shall take out an insurance, which covers liability in connection with the performance of accredited services

Reports carrying DANAK's logo are used, when reporting accredited services and show that these have been performed in accordance with the rules for accreditation.