

Report – Short version

Nr. 535 29572/7.1e – R2*



Report date 24 September 2009

Customer **Repair Care International B.V.**
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Test object Repair system for wood and wood - windows
Dry Flex 4

R2*) This short version is based on the test report No. 535 29572/7e R2 from 24 September 2009 and may be published only unabridged.




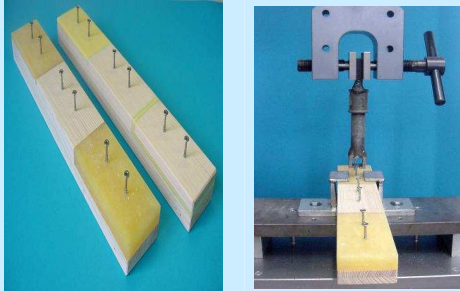
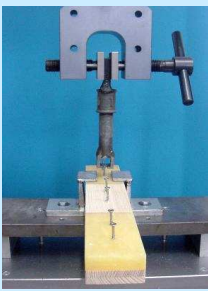
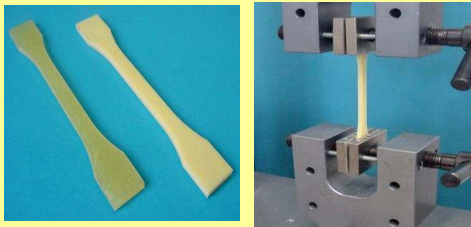



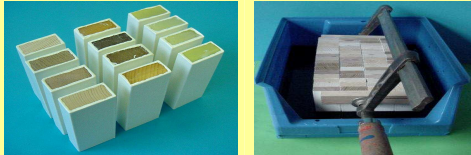

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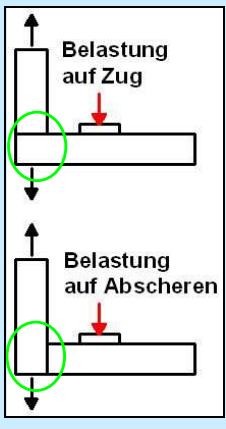
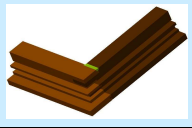

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TGA-ZM-16-93-00
TGA-ZM-16-93-00


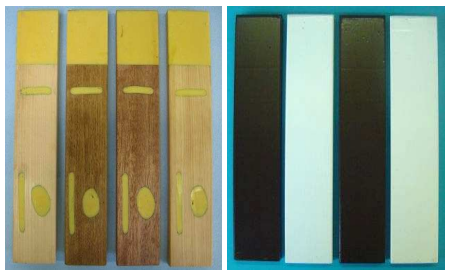

Summary of the results Dry Flex 4/ Module 1 – Physical properties

		Tests Basic standards	Test methods	Pictures	Results		Requirement and Evaluation			
Module 1	Physical properties	Hardening DIN EN ISO 868, DIN 53505	Shore D		Shore D Hardness after one week	64	Determination of the values (no assessment)			
					Achievement of 90 % of the end-hardness [h]	24				
		Withdraw-capacity DIN EN 1382	Climatic and Withdraw test			Normal- climate	Withdraw-load [N] Thickness 5 mm	1394	Percentage of the with- draw - load on "re- paired" places from the withdraw-load on wood	87 %
							Withdraw-load [N] Thickness 5 mm + 10 mm Wood	1290		80 %
						Temperature change	Withdraw-load [N] Thickness 5 mm	1213		128 %
							Withdraw-load [N] Thickness 5 mm + 10 mm Wood	1118		118 %
E-Modulus and Elasticity DIN EN ISO 527-1 DIN EN ISO 527-2	Tension test			E- Modulus [N/mm ²]	363.1	Breaking strain > 20 %	fulfilled			
				Rupture [%]	35.2					
Volume change DIN EN ISO 10563	Climatic test, Change of vol- ume and weight			Achievement of constant volume [h]		6	Deviation Volume-change ≤ 0.5 %	fulfilled		
				Deviation Volume-change [%]	QUV	0.15				
Temperature change	0.09									
Water permeability DIN EN 927-5	Immersion in water, Change of weight			water absorption coefficient f [%]	10.7	f ≤ 12.3 %	fulfilled			

Summary of the results Dry Flex 4/ Module 2 – Climatic and mechanical properties

Tests		Test methods	Pictures		Results			Requirement and assessment		
Basic standards										
Module 2	Climatic and mechanical properties	One-sided rain and UV radiation	Artificial weathering of the construction			no cracks were observed			No cracks are allowed within repaired places, or in the border area between repaired places and wood	fulfilled
		Corner joint strength ift-guideline for Corner joints- (Version 09/2005)	Tensile force Shear force Rupture			Repaired corner gap	Tension [N]	3152	2970	fulfilled
							Shear [N]	2214	-	-
						Repaired corner joint; Depth 5 mm	Tension [N]	3459	2970	fulfilled
							Shear [N]	2068	-	-
						Repaired corner joint; Depth 15 mm; replaced wood pieces	Tension [N]	-	2970	fulfilled
							Shear [N]	-	-	-
		Average repaired variants	Tension [N]	3306	2970	fulfilled				
			Shear [N]	2141	-	-				
		New state (without repair)	Tension [N]	3503	2970	fulfilled				
Shear [N]	2949		4740	not fulfilled						
Natural weathering DIN EN 927-1 DIN EN 927-2, DIN EN 927-3	Natural weathering Construction			From ten repaired places within the window, just one in the upper right corner of the frame had some cracks.			No cracks are allowed within repaired places, or in the border area between repaired places and wood	fulfilled		

Summary of the results Dry Flex 4/ Module 3 – Compatibility with coatings

Tests Basic standards		Test methods	Pictures	Results			Requirement and assessment			
Module 3	Compatibility with coatings	Artificial weathering (QUV) DIN EN 927-6 DIN EN 927-1 DIN EN 927-2, DIN EN ISO 4628	Artificial weathering of the coating ^{*1} 	Criteria	LM	WB	Determination of the values (Assessment scale from: 0 = very good up to 5 = very bad)			
				Blistering	0.0	5.0				
				Cracking	0.08	0.0				
				Flaking	0.0	0.0				
				Adhesion	0.83	1.0				
				Colour change	0.42	0.42				
				Chalking	2.33	1.0				
				Gloss difference	7.8	0.7				
		Height difference [mm]	0.02	0.0	Determination of the values (no assessment)					
		Criteria	LM	WB				Requirement	LM	WB
		Natural weathering DIN EN 927-3 DIN EN 927-1 DIN EN 927-2, DIN EN ISO 4628	Natural weathering of the coating ^{*1} (test duration 2 years)	Similar samples for the artificial weathering (QUV) and for the natural weathering  	Blistering	0,3	0,0	< 0.3	fulfilled	fulfilled
					Cracking	0,3	0,1	< 0.7	fulfilled	fulfilled
					Flaking	0,1	0,1	< 0.3	fulfilled	fulfilled
					Adhesion	0,7	0,5	< 0.7	fulfilled	fulfilled
Colour change	0,7				0,9	$\Delta \leq 1.0$	fulfilled	fulfilled		
Chalking	0,3				0,1	$\Delta \leq 1.0$	fulfilled	fulfilled		
Gloss difference (betw. RS and wood)	0,8				7,4	$\Delta \leq 5.0$	fulfilled	not fulfilled		
Height difference [mm]	0,10				0,13	$\Delta \leq 0.1 \text{ mm}$	fulfilled	not fulfilled		

LM: solvent based coatings

WB: water based coatings

^{*1} A direct correlation between the results of the artificial weathering and the natural weathering is not possible.