



RED HORSE

Joinery Woodscrew Range

ZYTEC™ Woodscrews

**PN-EN ISO 9227
SALT SPRAY TEST**

Conducted by:
Group of Testing
Laboratories



COASTAL

Shaping the future.

	<p>BUILDING RESEARCH INSTITUTE</p>
  <p>AB 023</p>	<p>GROUP OF TESTING LABORATORIES accredited by Polish Center for Accreditation</p> <p>accreditation certificate № AB 023</p>

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<p>CLIENT: RED HORSE Niels Bohrs Vej 25-27, DK-8660 Skanderborg</p>	
<p>OBJECT: Protecting coatings ZYTEC™+ and Fe/Zn25c on the steel screws Taken to test on 02.04.2010 .at record No. LM-01278:00/2010 in accordance to quality management procedure No. 18 tested within a period from 08.04.2010 to 12.05.2010</p>	
<p>METHOD / PROCEDURE OF TEST: PN-EN ISO 9227: 2007 (resistance to salt spray).</p>	
<p>TEST RESULTS:</p>	
<p>Tested characteristics</p>	<p>Test result</p>
<p>I. Screws surface appearance after salt spray test</p>	
<p>I.1. Screws with ZYTEC™+</p>	
<p>I.1. 1. After 96 hours specimens 1 - 15</p>	<p>No corrosive changes on the screws surface</p>
<p>I.1.2. After 120 hours specimens 1 - 15</p>	<p>No corrosive changes on the screws surface</p>
<p>I.1.3. After 168 hours specimens 1 - 15</p>	<p>No corrosive changes on the screws surface</p>
<p>I.1.4. After 336 hours specimens 1 do 15</p>	<p>No corrosive changes on the screws surface</p>
<p>I.1.5. After 504 hours specimens 1 do 15</p>	<p>No corrosive changes on the screws surface</p>
<p>I.1.6. After 624 hours</p>	<p>The screw No 1: screw-thread – change in colour. On each thread edges little white tarnish is visible.</p>

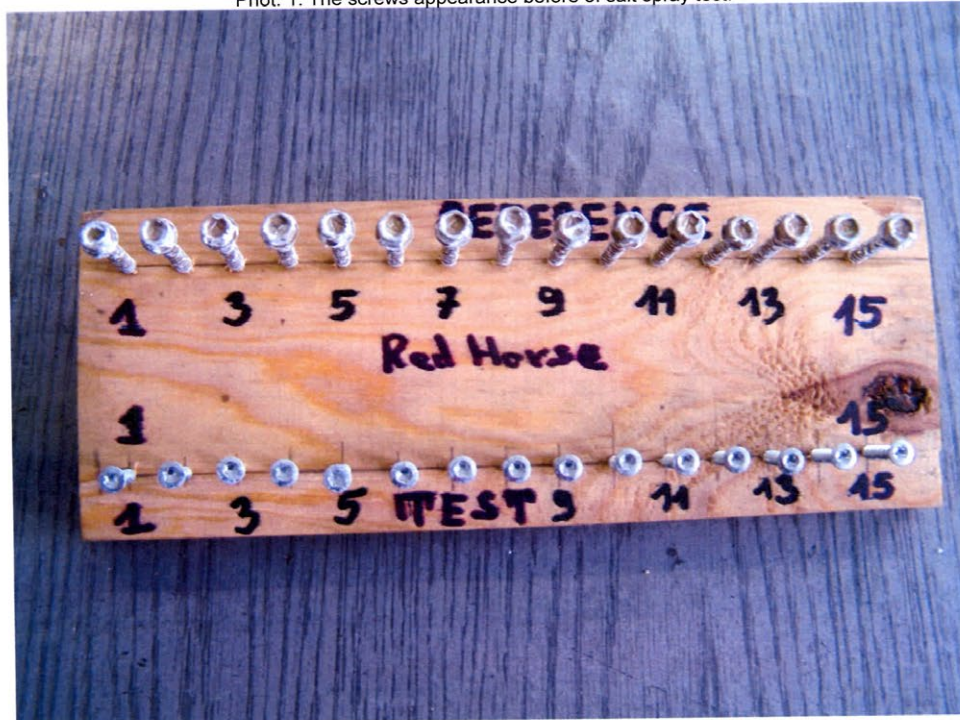


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I.1.7. After 696 hours	<p>The screw No 1: screw-thread – change in colour. On each thread edges little white tarnish is visible. Screws No 6, 8, 9 & 14 change in colour more darkly on the 15-20% thread surface. Screws No 14, 15 the beginning of white-rust is noticeable.</p>	
I.1.8. After 816 hours	<p>The screw No 1: screw-thread dark-grey change colour on the whole thread surface. The screw No: 6, 10, 11 & 14 on all screw-threads the white tarnish is visible. No red- rust symptoms.</p>	
I.2. Screws Fe/Zn25c		
I.2. 1. After 96 hours specimens 1 - 15	<p>No corrosive changes on the screws surface</p>	
I.2.2. After 120 hours specimens 1 - 15	<p>The white tarnish on the surfaces of screw-threads and screw –heads is visible.</p>	
I.2.3. After 168 hours	<p>The significant increase of white tarnish is visible on the surfaces of all screw-threads and screw-heads.</p>	
I.2.4. After 336 hours	<p>The increase in thickness of white tarnish on the surfaces of all screw-threads and screw-heads.</p>	
I.2.5. After 504 hours	<p>The increase in thickness of white tarnish on the surfaces of all screw-threads and screw-heads.</p>	
I.2.6. After 624 hours	<p>The screw No. 15 : visible red- rust on the ~ 50% of screw –head and ~ 1% screw-thread surfaces. The thick white tarnish is visible on all screws.</p>	
I.2.7. After 696 hours	<p>The screws No: 4 & 15, the red- rust is visible.</p>	
I.2.8. After 816 godz.	<p>The thick white tarnish is visible on all screws surfaces (No. 1÷15). The screw No: 15: the red- rust is visible on the ~80% of screw surface.</p>	

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Photographic documentation:		



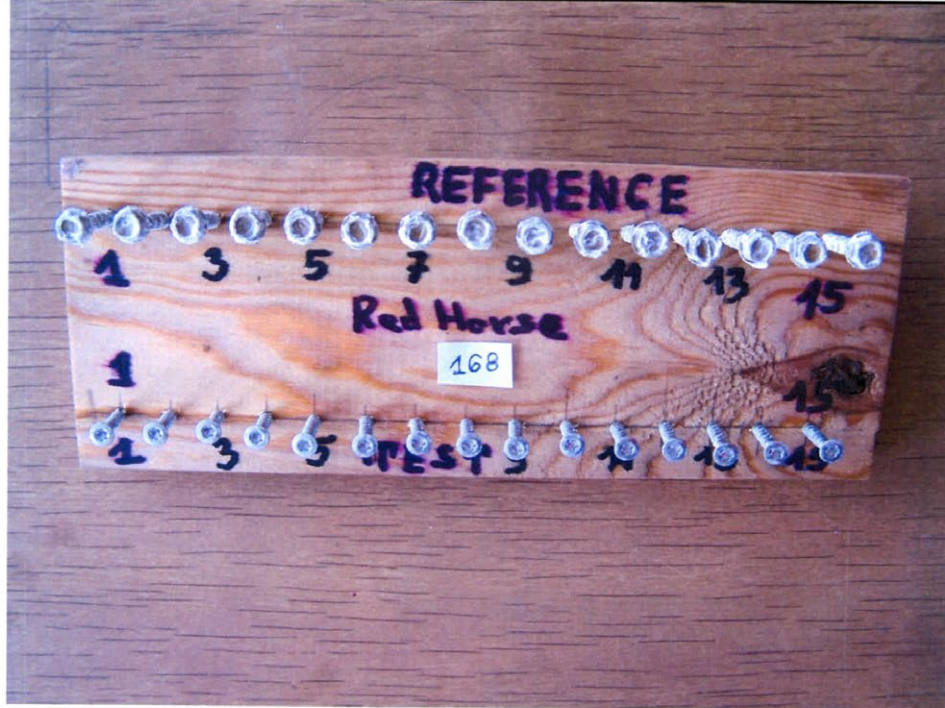
Phot. 1. The screws appearance before of salt spray test.



Phot.2. The screws appearance after 120 hours of salt spray test.

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Photographic documentation:



Phot.3. The screws appearance after 168 hours of salt spray test .



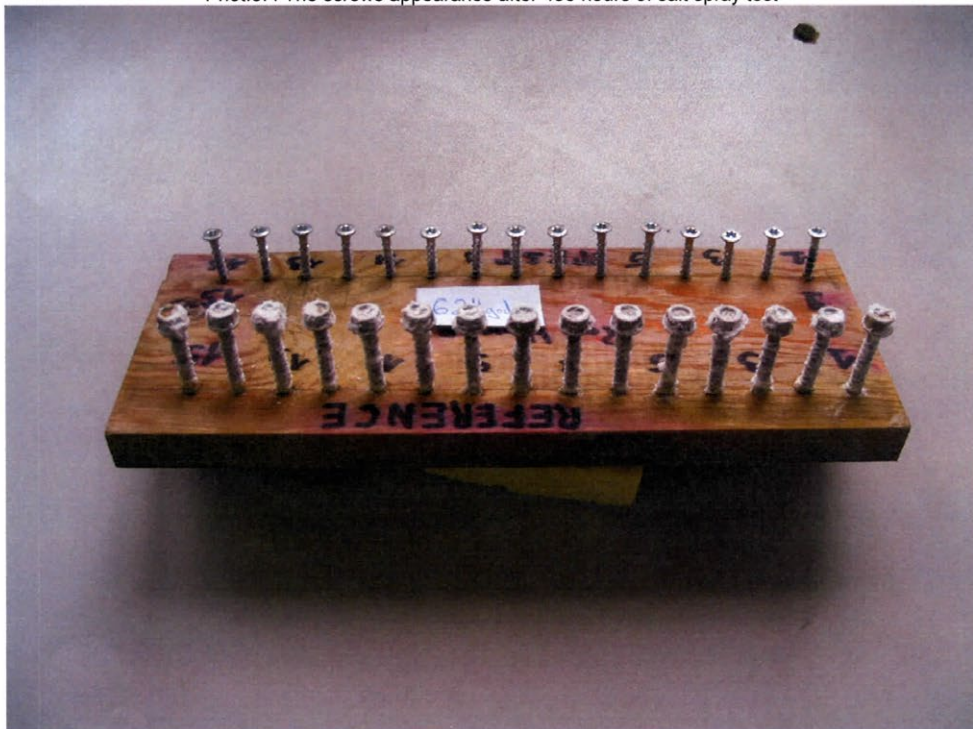
Phot.4. The screws appearance after 336 hours of salt spray test

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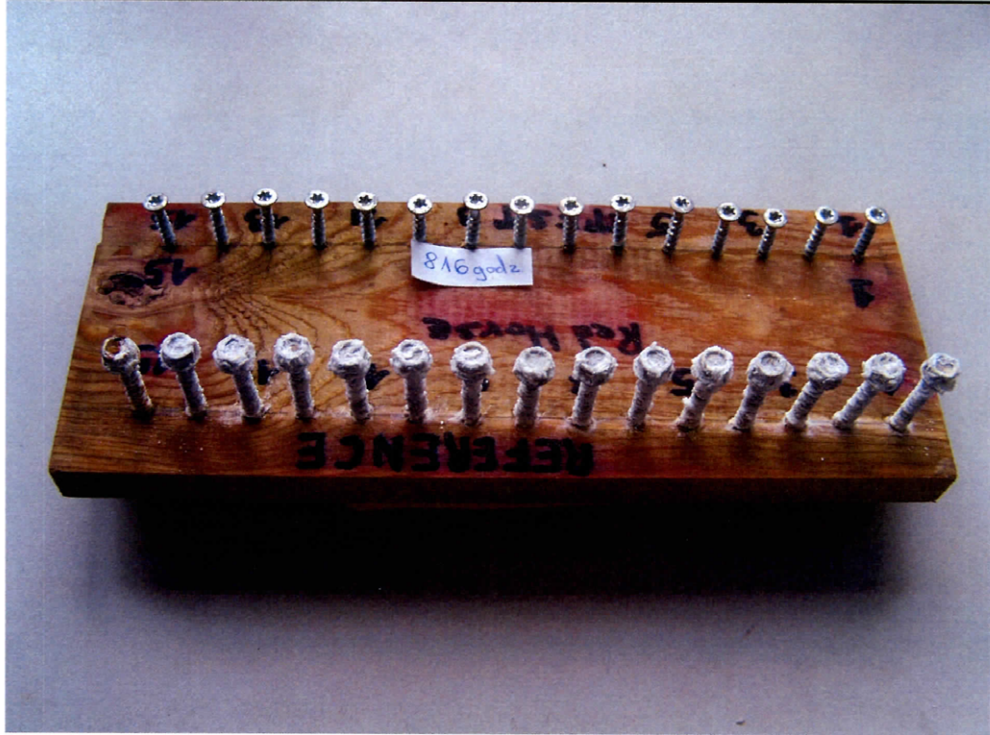


Photographic documentation:



Phot.5. . The screws appearance after 456 hours of salt spray test

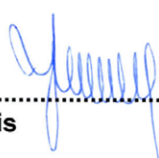


Phot.6. . The screws appearance after 624hours hours of salt spray test

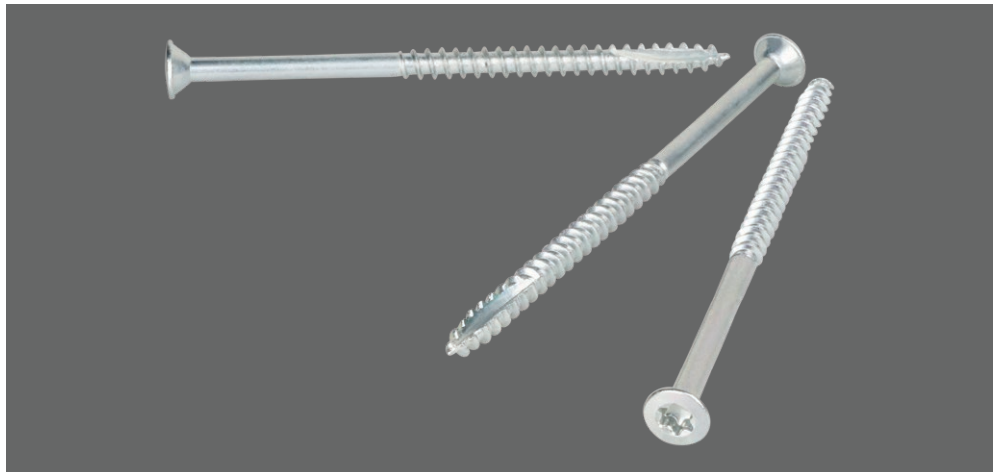
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Photographic documentation:		
		
Phot.7. . The screws appearance after 816 hours hours of salt spray test		
Responsible for the test: eng. Wojciech Piwowarczyk 	Authorizing person PhD. eng. Barbara France 	
Warsaw, 31.05.2010		
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