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Poznań 23.01.2019

### TEST REPORT No U 715 BDZ/2018

*Testing of bituminized softboards*

**Customer:**

Euro Accessories Ltd

**Performance date:**

4.10.2018 – 5.12.2018

**Operators:**

First name and surname	Signature
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## 1 IDENTIFICATION (DESCRIPTION OF TESTED OBJECTS)

The objects of the test were bituminized softboards. As it was agreed, for the thickness range of bituminized softboards produced by the Customer, those with minimum and maximum thickness were chosen for testing as representative. Customer delivered samples of two types of boards:

- B10 with bitumen content of 7.0%-15.0%, with nominal dimensions: 1000mm×500mm×25.0mm (5 pcs),
- B10 with bitumen content of 7.0%-15.0%, with nominal dimensions: 1000mm×500mm×8.0mm (5 pcs).

## 2 DATE OF DELIVERY OF TESTED OBJECTS

Samples were delivered to ITD on 4.10.2018.

## 3 SCOPE AND METHODS OF EXAMINATION

According to the order the following tests were carried out in the scope resulting from the *Specification 033 Pavement Quality Concrete for Airfields, Appendix C – Tests for Manufactured Joint Fillers*” and *the Specification for Highway Works series 1000, clause 1015*:

- a) weathering test,
- b) compression and recovery test,
- c) extrusion test.

## 4 TEST RESULTS

Specimens were cut from all delivered samples according to p. C.2 of the Specification 033 and p. 2 of the Specification for Highway Works.

### 4.1 Weathering test (C.3 and 2(i))

According to the requirements of the Specification 033 and the Specification for Highway Works, four specimens with nominal dimensions of 115mm×115mm were prepared from each sample. The specimens were subjected to the following:

- a) drying in an oven at a temperature of  $(55\pm 5)^{\circ}\text{C}$  for 7 days,
- b) immersion in water at a temperature of  $(18\pm 2)^{\circ}\text{C}$  for 24 hours,
- c) five cycles of freezing for 4 hours with specimens immersed to half the height in water and then soaking the specimens to half the height in water at a temperature of  $(28\pm 10)^{\circ}\text{C}$  for 1 hour after thawing,

d) drying at room temperature for 48 hours.

Test results are presented in Table 1.

**Table 1:** Weathering test of bituminized softboards type B10

Board type	Specimen No	Result of visual inspection of the specimens after the test
B10/25.0	A 1.1	no signs of destruction, cracks or other defects; positive result
	A 1.2	
	A 1.3	
	A 1.4	
	A 2.1	
	A 2.2	
	A 2.3	
	A 2.4	
	A 3.1	
	A 3.2	
	A 3.3	
	A 3.4	
	A 4.1	
	A 4.2	
	A 4.3	
	A 4.4	
B10/8.0	A 5.1	no signs of destruction, cracks or other defects; positive result
	A 5.2	
	A 5.3	
	A 5.4	
	B 1.1	
	B 1.2	
	B 1.3	
	B 1.4	
	B 2.1	
	B 2.2	
	B 2.3	
	B 2.4	
	B 3.1	
	B 3.2	
	B 3.3	
	B 3.4	
B 4.1		
B 4.2		
B 4.3		
B 4.4		
B 5.1		
B 5.2		
B 5.3		
B 5.4		

**4.2 Compression and recovery test (C.4 and 2(ii))**

According to the requirements of the Specification 033 and the Specification for Highway Works, compression and recovery test was performed on four specimens from each sample with nominal dimensions of 100mm×100mm. Two of the specimens were subjected to weathering test (p. 4.1) and the other two were not. Test results are presented in Tables 2 and 3.



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**Table 2:** Compression and recovery test of bituminized softboards type B10  
4.10.2018 (specimens after weathering test)

Board type	Specimen No	Thickness		Relative thickness after the test
		before the test	after the test	
		mm		%
B10/25.0	A 1.1	24.39	21.06	86
	A 1.2	24.80	21.45	86
	A 2.1	24.65	20.47	83
	A 2.2	24.42	20.19	83
	A 3.1	24.41	19.76	81
	A 3.2	24.42	20.66	85
	A 4.1	24.34	19.25	79
	A 4.2	24.15	19.42	80
	A 5.1	24.43	19.08	78
	A 5.2	24.48	19.24	79
		<b>average</b>		<b>82</b>
B10/8.0	B 1.1	8.10	7.00	86
	B 1.2	8.04	6.97	87
	B 2.1	8.17	7.02	86
	B 2.2	8.15	7.05	87
	B 3.1	7.94	7.05	89
	B 3.2	8.00	6.93	87
	B 4.1	7.98	6.98	87
	B 4.2	7.91	6.51	82
	B 5.1	7.96	6.70	84
	B 5.2	7.98	6.84	86
		<b>average</b>		<b>86</b>

**Table 3:** Compression and recovery test of bituminized softboards type B10  
4.10.2018 (specimens without weathering test)

Board type	Specimen No	Weight		Relative loss of weight after the test	Thickness		Relative thickness after the test
		before the test	after the test		before the test	after the test	
		g		%	mm		%
B10/25.0	A 1.5	64.06	63.80	0.41	24.40	20.62	85
	A 1.6	64.41	64.17	0.37	24.29	21.05	87
	A 2.5	64.01	63.78	0.36	24.20	20.93	86
	A 2.6	63.89	63.71	0.28	23.93	20.98	88
	A 3.5	64.37	64.22	0.23	24.67	21.19	86
	A 3.6	63.04	62.89	0.24	23.86	21.25	89
	A 4.5	65.25	65.11	0.21	24.11	21.27	88
	A 4.6	65.21	65.07	0.21	24.41	21.63	89
	A 5.5	64.69	64.55	0.22	23.85	21.30	89
	A 5.6	64.60	64.47	0.20	24.07	21.26	88
		<b>average</b>		<b>0.27</b>	<b>average</b>		<b>87</b>
B10/8.0	B 1.5	20.25	20.17	0.40	7.92	6.53	82
	B 1.6	20.31	20.23	0.39	7.84	7.20	92
	B 2.5	20.33	20.25	0.39	7.82	7.07	90
	B 2.6	20.24	20.15	0.44	7.83	7.06	90
	B 3.5	20.77	20.70	0.34	7.76	7.14	92
	B 3.6	20.68	20.61	0.34	7.79	7.16	92
	B 4.5	20.42	20.36	0.29	7.87	7.10	90
	B 4.6	20.19	20.13	0.30	7.66	7.05	92
	B 5.5	20.59	20.52	0.34	7.84	7.12	91
	B 5.6	20.31	20.25	0.30	7.90	7.00	89
		<b>average</b>		<b>0.35</b>	<b>average</b>		<b>90</b>

#### 4.3 Extrusion test (C.5 and 2(iii))

According to the requirements of the Specification 033 and the Specification for Highway Works, extrusion test was performed on two specimens from each sample subjected to weathering test (p. 4.1). Test results are presented in Table 4.

**Table 4:** Extrusion test of bituminized softboards type B10 of (specimens after weathering test)

Board type	Specimen No	Displacement of the free side of the specimen
		mm
<b>B10/25.0</b>	A 1.3	0.14
	A 1.4	0.31
	A 2.3	0.23
	A 2.4	0.28
	A 3.3	0.17
	A 3.4	0.21
	A 4.3	0.31
	A 4.4	0.19
	A 5.3	0.11
	A 5.4	0.39
	<b>average</b>	<b>0.23</b>
<b>B10/8.0</b>	B 1.3	0.31
	B 1.4	0.36
	B 2.3	0.35
	B 2.4	0.34
	B 3.3	0.36
	B 3.4	0.31
	B 4.3	0.22
	B 4.4	0.29
	B 5.3	0.26
	B 5.4	0.27
	<b>average</b>	<b>0.31</b>

## 5 SUMMARY

**Table 5:** Quality of bitumen impregnated boards B10/25.0mm and B10/8.0mm in comparison with the requirements of the *Specification 033 and Pavement Quality Concrete for Airfields The Specification for Highway Works series 1000*

Property	Specification	Result for board	
		B10/25.0 mm	B10/8.0 mm
Weathering test	All specimens are free from signs of disintegration or shrinkage	conforms	conforms
Compression and recovery test	All 4 specimens have Recovery Values of at least 70% and neither of the two new specimens has suffered a reduction in mass in excess of 1%	conforms	conforms
Extrusion test	The extrusion of the free edge does not exceed 6mm	conforms	conforms

## 6 STATEMENT

Test results presented in this report refer to the tested samples only.

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————— **END OF THE REPORT** —————