

Test Report

Report No	2371/8524841	This Report consists of 26 pages
Client	ACO Severin Ahlmann GmbH & Co. KG AM Ahlmannkai Budelsdorf 24782 Germany	
Authority & date	Signed Quotation Acceptance No. BSI 00 Dated 25 April 2016	000762160
Items tested	Linear Drainage Channels	
Specification	BS EN 1433:2002 + A1:2005 Clauses 4, 7.15.1 and 8 Direct commission test	5, 6.3.4, 7.1, 7.2, 7.3, 7.5, 7.8,
Results	See Summary of Results on Page 2	
Prepared by	C Higby	Engineer
Authorized by	S Ginger	Team Manager
Issue Date	19 May 2016	
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TESTING, EXAMINATION AND ASSESSMENT OF LINEAR DRAINAGE CHANNELS SUBMITTED AS A DIRECT COMMISION TEST SAMPLES

INTRODUCTION

At the request of ACO Severin Ahlmann GmbH & Co. KG the linear drainage channels detailed below were tested and assessed against the requirements of BS EN 1433:2002 + A1:2005 Clauses 4, 5, 6.3.4, 7.1, 7.2, 7.3, 7.5, 7.8, 7.15.1 and 8 as indicated on the following pages of this Report. It is emphasized that assessments were not made against the other clauses of the Specification. This request was made in a BSI Quotation Acceptance Form number BSI 0000762160 dated 25 April 2016.

The testing detailed in this Test Report was supervised by a BSI representative at the premises of ACO Severin Ahlmann GmbH & Co. KG, on 17 May 2016.

Item No	Class	Typ e	Product Type	Part No	Description
1	E600	Μ	ACO Multiline Seal in V100S Typ 20.0 100cm	132370	Linear Drainage Channel
2	D400	Μ	ACO Multiline Seal in V100S Typ 20.0 100cm	132370	Linear Drainage Channel
3	C250	Μ	ACO Multiline Seal in V100S Typ 20.0 100cm	132370	Linear Drainage Channel
4	B125/A15	М	ACO Multiline Seal in V100S Typ 20.0 100cm	132370	Linear Drainage Channel
5	E600	М	ACO Multiline Seal in V100S Typ 0.0 100cm	132330	Linear Drainage Channel
6	D400	М	ACO Multiline Seal in V100S Typ 0.0 100cm	132330	Linear Drainage Channel
7	C250	М	ACO Multiline Seal in V100S Typ 0.0 100cm	132330	Linear Drainage Channel
8	B125/A15	М	ACO Multiline Seal in V100S Typ 0.0 100cm	132330	Linear Drainage Channel

TEST ITEMS

SUMMARY OF RESULTS

The test items assessed met the requirements of those clauses, or parts thereof, of the Specification against which assessments were made.

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Test No: 1

Component Description: CLASS: E600 PRODUCT: ACO Multiline Seal in V100S Typ 20.0 100cm REFERENCE:132370

EXAMINATION AND TEST

CLAUSE ASSESSMENT 4. **CLASSIFICATION** The drainage channel was designated class E600. Pass PLACES OF INSTALLATION FOR DRAINAGE CHANNELS 5. The manufacturer stated that the drainage channel was intended for installation in Group 5 areas. Pass 6. MATERIALS 6.1 General 6.1.1 **Drainage channels**

The drainage channel was manufactured from grey polymer concrete. Not assessed

6.3 Additional requirements

6.3.4 Synthetic resin concrete

The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3

	Specified	Actual	
Flexural bending strength Mean (N/mm ²) Minimum (N/mm ²)	22 min 18 min	23.2 22.1	Pass Pass
Compressive strength Mean (N/mm ²) Compressive strength	90 min	111.5	Pass
Minimum (N/mm ²)	75 min	108.9	Pass

Pass

7. DESIGN AND MANUFACTURING REQUIREMENTS

7.1 General

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,999,1000	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	250 ±2.5	252,251,252	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

Specified	Actual	
-	100	
-	192	
-	Yes	-
	Specified - -	Specified Actual - 100 - 192 - Yes

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail.

Pass

	•		
Trafficked edges (mm)	4 min	4.22,4.16,4.20	-
Contact surfaces (mm)	2 min	2.12,2.06,2.15	-

Actual

Specified

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 600kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

X-200 Y-150 Z-200

Pass

ASSESSMENT

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EXAMINATION AND TEST (CONTINUED)

CL/

MENT

Pass Pass

Pass Pass Pass

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CLAUSE		ASSESS
8.	MARKING	
8.2	Marking of channel bodies	
	Specified marking	
	 a) reference to this standard, EN 1433 (if all requirements are met) 	
	b) appropriate class	
	 name and/or identification mark of manufacturer of the channel body, which may be in code 	
	d) Type of product (Type M or Type I)	
	e) date of manufacture (coded or not coded)	
	 for channel units with inbuilt gradients the sequence on each unit 	
	 g) marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant) 	

Actual marking

Visible on body

ACO 20.0 → Sealin 001

Label

	ACO Multiline Seal in V100S Typ 20.0, 100cm, STVZ		CE
	KL. A15-E DIN EN 14	600, Orlgin:GERMANY 433, TYP M	16
NB: 86 RD 01	3280 1	DoP: ED/G1/105	51



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Test No: 2

Component Description: CLASS: D400 PRODUCT: ACO Multiline Seal in V100S Typ 20.0 100cm REFERENCE: 132370

EXAMINATION AND TEST (CONTINUED)

CLAUSE

ASSESSMENT

Pass

Pass

4. CLASSIFICATION

The drainage channel was designated class D400. Pass

5. PLACES OF INSTALLATION FOR DRAINAGE CHANNELS

The manufacturer stated that the drainage channel was intended for installation in Group 4 areas.

6. MATERIALS

6.1 General

6.1.1 Drainage channels

The drainage channel was manufactured from grey polymer concrete. Not assessed

6.3 Additional requirements

6.3.4 Synthetic resin concrete

The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3

	Specified	Actual	
Flexural bending strength Mean (N/mm ²) Minimum (N/mm ²)	22 min 18 min	23.2 22.1	Pass Pass
Compressive strength Mean (N/mm ²) Compressive strength	90 min	111.5	Pass
Minimum (N/mm ²)	75 min	108.9	Pass

7. DESIGN AND MANUFACTURING REQUIREMENTS

7.1 General

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,999,1000	Pass
Overall width b (mm)	135 ± 2	135,135,135	Pass
Overall height h (mm)	250 ± 2.5	252,251,252	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

Specified	Actual	
-	100	
-	192	
-	Yes	
	Specified - -	Specified Actual - 100 - 192 - Yes

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail.

SpecifiedActualTrafficked edges (mm)4 min4.22,4.16,4.20PassContact surfaces (mm)2 min2.12,2.06,2.15Pass

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 400kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

X-200 Y-150 Z-200

ASSESSMENT

Pass

Pass

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EXAMINATION AND TEST (CONTINUED)

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1ENT

Pass Pass

Pass Pass Pass

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CLAUSE		ASSESSM
8.	MARKING	
8.2	Marking of channel bodies	
	 Specified marking a) reference to this standard, EN 1433 (if all requirements are met) b) appropriate class c) name and/or identification mark of manufacturer of the 	
	 channel body, which may be in code d) Type of product (Type M or Type I) e) date of manufacture (coded or not coded) f) for channel units with inbuilt gradients the sequence on each unit g) marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant) 	

Actual marking

Visible on body

ACO 20.0 → Sealin 001

Label

	ACO Multiline Seal in V100S Typ 20.0, 100cm, STVZ	CE
ACO	KL. A15-E600, Origin:GERMANY DIN EN 1433, TYP M	16
NB: 86 RD 01	3280 1 DoP: ED/G1	1/1051

RD	01	3280	1
13	22	370	







Page 9 of 26 Test No: 3 Component Description: CLASS: C250 PRODUCT: ACO Multiline Seal in V100S Typ 20.0 100cm REFERENCE: 132370 **EXAMINATION AND TEST (CONTINUED) CLAUSE** ASSESSMENT **CLASSIFICATION** The drainage channel was designated class C250. Pass PLACES OF INSTALLATION FOR DRAINAGE CHANNELS The manufacturer stated that the drainage channel was intended for installation in Group 3 areas. Pass MATERIALS 6.1 General 6.1.1 Drainage channels The drainage channel was manufactured from grey polymer concrete. Not assessed 6.3 Additional requirements 6.3.4 Synthetic resin concrete The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3 Specified Actual Flexural bending strength Mean (N/mm^2) 22 min 23.2 Pass Minimum (N/mm^2) 18 min 22.1 Pass

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Compressive strength Mean (N/mm^2) 90 min 111.5 Pass Compressive strength Minimum (N/mm^2) 75 min 108.9 Pass

Pass

DESIGN AND MANUFACTURING REQUIREMENTS 7.

7.1 General

4.

5.

6.

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,999,1000	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	250 ±2.5	252,251,252	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

-	Specified	Actual	
Dimension b (mm)	-	100	-
Dimension h (mm)	-	192	-
Dimension $h \ge b$	-	Yes	-

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail.

	Specifieu	Actual	
Trafficked edges (mm)	2 min	4.22,4.16,4.20	Pass
Contact surfaces (mm)	1 min	2.12,2.06,2.15	Pass

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 250kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

ASSESSMENT

Pass

Pass

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EXAMINATION AND TEST (CONTINUED)

CL/

MENT

Pass Pass

Pass Pass Pass

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CLAUSE		ASSESSI
8.	MARKING	
8.2	Marking of channel bodies	
	 Specified marking a) reference to this standard, EN 1433 (if all requirements are met) b) appropriate class c) name and/or identification mark of manufacturer of the channel body, which may be in code d) Type of product (Type M or Type I) e) date of manufacture (coded or not coded) 	
	 f) for channel units with inbuilt gradients the sequence on each unit g) marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant) 	

Actual marking

Visible on body

ACO 20.0 → Sealin 001

Label

	ACO Mul Typ 20.0	CE	
ACO	KL. A15-E DIN EN 14	16	
NB: 86 RD 01	3280 1	DoP: ED/G1/105	51



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Test No: 4

Component Description: CLASS: B125/A15 PRODUCT: ACO Multiline Seal in V100S Typ 20.0 100cm REFERENCE: 132370

EXAMINATION AND TEST (CONTINUED)

CLAUSE

ASSESSMENT

Pass

Pass

4. CLASSIFICATION

The drainage channel was designated class A15 and B125. Pass

5. PLACES OF INSTALLATION FOR DRAINAGE CHANNELS

The manufacturer stated that the drainage channel was intended for installation in Group 1 and 2 areas.

6. MATERIALS

6.1 General

6.1.1 Drainage channels

The drainage channel was manufactured from grey polymer concrete. Not assessed

6.3 Additional requirements

6.3.4 Synthetic resin concrete

The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3

	Specified	Actual	
Flexural bending strength	-		
Mean (N/mm ²)	22 min	23.2	Pass
Minimum (N/mm ²)	18 min	22.1	
			Pass
Compressive strength			
Mean (N/mm ²)	90 min	111.5	Pass
Compressive strength			
Minimum (N/mm ²)	75 min	108.9	Pass

7. DESIGN AND MANUFACTURING REQUIREMENTS

7.1 General

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,999,1000	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	250 ±2.5	252,251,252	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

Specified	Actual	
-	100	
-	192	
-	Yes	
	Specified - - -	SpecifiedActual-100-192-Yes

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail.

-	Specified	Actual
Trafficked edges (mm)	-	4.22,4.16,4.20
Contact surfaces (mm)	-	2.12,2.06,2.15

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 125kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

Pass

ASSESSMENT

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EXAMINATION AND TEST (CONTINUED)

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CLAUSE		ASSESSMENT
8.	MARKING	
8.2	Marking of channel bodies	
	Specified marking	
	a) reference to this standard, EN 1433 (if all requirements are met)b) appropriate class	Pass Pass
	 c) name and/or identification mark of manufacturer of the channel body, which may be in code d) Type of product (Type M or Type I) 	Pass Pass
	e) date of manufacture (coded or not coded)	Pass
	 for channel units with inbuilt gradients the sequence on each unit 	-
	 g) marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant) 	-
	Actual marking	

Visible on body

ACO 20.0 → Sealin 001

Label

	ACO Multiline Seal in V100S Typ 20.0, 100cm, STVZ		CE
ACO	KL. A15-E600, Orlgin:GERMANY DIN EN 1433, TYP M		16
NB: 86 RD 01	3280 1	DoP: ED/G1/1	051

RD	01	3280	1	
13	2	270		







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Test No: 5

Component Description: CLASS: E600 PRODUCT: ACO Multiline Seal in V100S Typ 0.0 100cm REFERENCE: 132330

EXAMINATION AND TEST (CONTINUED)

CLAUSE

ASSESSMENT

Pass

Pass

4. CLASSIFICATION

The drainage channel was designated class E600. Pass

5. PLACES OF INSTALLATION FOR DRAINAGE CHANNELS

The manufacturer stated that the drainage channel was intended for installation in Group 5 areas.

6. MATERIALS

6.1 General

6.1.1 Drainage channels

The drainage channel was manufactured from grey polymer concrete. Not assessed

6.3 Additional requirements

6.3.4 Synthetic resin concrete

The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3

	Specified	Actual	
Flexural bending strength	-		
Mean (N/mm ²)	22 min	23.2	Pass
Minimum (N/mm ²)	18 min	22.1	
			Pass
Compressive strength			
Mean (N/mm ²)	90 min	111.5	Pass
Compressive strength			
Minimum (N/mm ²)	75 min	108.9	Pass

7. DESIGN AND MANUFACTURING REQUIREMENTS

7.1 General

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,1000,999	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	150 ±2	152,151,150	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

Specified	Actual	
-	100	
-	92	
-	No	
	Specified - - -	Specified Actual - 100 - 92 - No

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail.

	Speemed	Actual	
Trafficked edges (mm)	4 min	4.22,4.16,4.20	Pass
Contact surfaces (mm)	2 min	2.12,2.06,2.15	Pass

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 600kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

X-200 Y-150 Z-200

ASSESSMENT

Pass

Pass

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EXAMINATION AND TEST (CONTINUED)

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CLAUSE		ASSESSMENT
8.	MARKING	
8.2	Marking of channel bodies	
	Specified marking	
	a) reference to this standard, EN 1433 (if all requirements are	
	met)	Pass
	b) appropriate class	Pass
	c) name and/or identification mark of manufacturer of the	
	channel body, which may be in code	Pass
	d) Type of product (Type M or Type I)	Pass
	e) date of manufacture (coded or not coded)	Pass
	f) for channel units with inbuilt gradients the sequence on each unit	-
	 g) marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant) 	-
	Actual marking	

Visible on body

ACO 0.0 → Sealin 006

Label

	ACO Multiline Seal in V100S	CE
ACO	KL. A15-E600, Origin:GERMANY DIN EN 1433, TYP M	16
NB: 86 RD 01	3280 1 DoP: El	D/G1/1051



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Test No: 6

Component Description: CLASS: D400 PRODUCT: ACO Multiline Seal in V100S Typ 0.0 100cm REFERENCE: 132330

EXAMINATION AND TEST (CONTINUED)

CLAUSE

ASSESSMENT

Pass

Pass

4. CLASSIFICATION

The drainage channel was designated class D400. Pass

5. PLACES OF INSTALLATION FOR DRAINAGE CHANNELS

The manufacturer stated that the drainage channel was intended for installation in Group 4 areas.

6. MATERIALS

6.1 General

6.1.1 Drainage channels

The drainage channel was manufactured from grey polymer concrete. Not assessed

6.3 Additional requirements

6.3.4 Synthetic resin concrete

The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3

	Specified	Actual	
Flexural bending strength Mean (N/mm ²) Minimum (N/mm ²)	22 min 18 min	23.2 22.1	Pass Pass
Compressive strength Mean (N/mm ²)	90 min	111.5	Pass
Minimum (N/mm ²)	75 min	108.9	Pass

7. DESIGN AND MANUFACTURING REQUIREMENTS

7.1 General

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,1000,999	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	150 ±2	152,151,150	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

-	Specified	Actual
Dimension b (mm)	-	100
Dimension h (mm)	-	92
Dimension $h \ge b$	-	No

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail. Specified Actual

Trafficked edges (mm)4 min4.22,4.16,4.20PassContact surfaces (mm)2 min2.12,2.06,2.15Pass

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 400kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

X-200 Y-150 Z-200

ASSESSMENT

Pass

Pass

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EXAMINATION AND TEST (CONTINUED)

CL

ASSESSMENT

Pass Pass

Pass Pass Pass

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CLAUSE	
8.	MARKING
8.2	Marking of channel bodies
	Specified marking
	 a) reference to this standard, EN 1433 (if all requirements are met)
	b) appropriate class
	 c) name and/or identification mark of manufacturer of the channel body, which may be in code d) Type of product (Type M or Type I)
	a) Type of product (Type M of Type 1)
	e) date of manufacture (coded or not coded)
	 for channel units with inbuilt gradients the sequence on each unit
	a) marking of weather resistance grade for concrete drainage

g) marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant)

Actual marking

Visible on body

ACO 0.0 → Sealin 006

Label

	ACO Multiline Seal in V100S	CE
ACO	KL. A15-E600, Origin:GERMANY DIN EN 1433, TYP M	16
NB: 86 RD 01	3280 1 DoP: ED/G	1/1051



www.aco.com/DoP



Page 21 of 26 Test No: 7 Component Description: CLASS: C250 PRODUCT: ACO Multiline Seal in V100S Typ 0.0 100cm REFERENCE: 132330 **EXAMINATION AND TEST (CONTINUED) CLAUSE** ASSESSMENT **CLASSIFICATION** The drainage channel was designated class C250. Pass PLACES OF INSTALLATION FOR DRAINAGE CHANNELS The manufacturer stated that the drainage channel was intended for installation in Group 3 areas. Pass MATERIALS General 6.1.1 Drainage channels The drainage channel was manufactured from grey polymer concrete. Not assessed Additional requirements 6.3.4 Synthetic resin concrete The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3 Specified Actual Flexural bending strength Mean (N/mm^2) 22 min 23.2 Pass Minimum (N/mm^2) 18 min 22.1 Pass

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Compressive strength Mean (N/mm^2) 90 min 111.5 Pass Compressive strength Minimum (N/mm^2) 75 min 108.9 Pass

Pass

DESIGN AND MANUFACTURING REQUIREMENTS 7.

7.1 General

4.

5.

6.

6.1

6.3

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

ASSESSMENT

Pass

Pass

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,1000,999	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	150 ±2	152,151,150	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

Specified	Actual	
-	100	
-	92	
-	No	
	Specified - - -	Specified Actual - 100 - 92 - No

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by galvanised steel

	Specified	Actual	
Trafficked edges (mm)	2 min	4.22,4.16,4.20	Pass
Contact surfaces (mm)	1 min	2.12,2.06,2.15	Pass

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 250kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

X-150 Y-75 Z-150

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EXAMINATION AND TEST (CONTINUED)

CL

ESSMENT

Pass Pass

Pass Pass Pass

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CLAUSE			ASSE
8.	MA	ARKING	
8.2	Ма	rking of channel bodies	
	Spe	ecified marking	
	a)	reference to this standard, EN 1433 (if all requirements are met)	
	b)	appropriate class	
	c)	name and/or identification mark of manufacturer of the channel body, which may be in code	
	d)	Type of product (Type M or Type I)	
	e)	date of manufacture (coded or not coded)	
	f)	for channel units with inbuilt gradients the sequence on each unit	
	g)	marking of weather resistance grade for concrete drainage channels (N or W and $+R$ if relevant)	

Actual marking

Visible on body

ACO 0.0 → Sealin 006

Label

	ACO Multiline Seal in V100S	CE
	KL. A15-E600, Origin:GERMANY DIN EN 1433, TYP M	16
NB: 86 RD 01	3280 1 DoP: ED/G1	/1051

132330

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Test No: 8

Component Description: CLASS: B125/A15 PRODUCT: ACO Multiline Seal in V100S Typ 0.0 100cm REFERENCE: 132330

EXAMINATION AND TEST (CONTINUED)

CLAUSE

ASSESSMENT

Pass

Pass

4. CLASSIFICATION

The drainage channel was designated classes A15 and B125 . Pass

5. PLACES OF INSTALLATION FOR DRAINAGE CHANNELS

The manufacturer stated that the drainage channel was intended for installation in Group 1 and 2 areas.

6. MATERIALS

6.1 General

6.1.1 Drainage channels

The drainage channel was manufactured from grey polymer concrete. Not assessed

6.3 Additional requirements

6.3.4 Synthetic resin concrete

The manufacturer supplied documentary evidence to show that the polyester resin concrete was in accordance with Table 2 when tested using samples in accordance with Table 3

	Specified	Actual	
Flexural bending strength			
Mean (N/mm ²)	22 min	23.2	Pass
Minimum (N/mm²)	18 min	22.1	
			Pass
Compressive strength			
Mean (N/mm ²)	90 min	111.5	Pass
Compressive strength			
Minimum (N/mm ²)	75 min	108.9	Pass

7. DESIGN AND MANUFACTURING REQUIREMENTS

7.1 General

The drainage channel was free of defects which might impair its fitness for purpose.

No assessment was made regarding the adequacy to withstand normal transportation and handling loads.

ASSESSMENT

Pass

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

7. DESIGN AND MANUFACTURING REQUIREMENTS (CONTINUED)

7.2 Dimensions and dimensional tolerances

	Specified	Actual	
Overall length L (mm)	1000 ±2	999,1000,999	Pass
Overall width b (mm)	135 ±2	135,135,135	Pass
Overall height h (mm)	150 ±2	152,152,150	Pass

The specified value is the nominal dimension was taken from manufacturers drawing. The tolerance stated is that required by clause 7.2 for the given nominal size

7.3 Geometric design

-	Specified	Actual
Dimension b (mm)	-	100
Dimension h (mm)	-	92
Dimension $h \ge b$	-	No

7.5 Jointing of drainage channel units

7.5.1 Watertightness

The joint between the channel units was designed in such a	
way that it could be durably sealed.	Pass
When test in accordance with clause 9.3.6 the joint and the	
bodies showed no leakage.	Pass
The manufacturer's instructions stated the jointing method.	Pass
There was a smooth transition at the joints of adjacent units	
without constriction if the discharge cross section.	Pass

7.8 Trafficked edge and contact surface protection

The protection of trafficked edges and contact surfaces between the channel body and grating/cover was by an anchored galvanised steel rail.

	Specified	Actual	
Trafficked edges (mm)	-	4.22,4.16,4.20	
Contact surfaces (mm)	-	2.12,2.06,2.15	

7.15 STRENGTH TESTING

7.15.1 Channel bodies

When tested in accordance with clause 9.1.4.1 the haunched bodies of the three units tested withstood a load of 125kN for 30 seconds without failure or signs of cracking or excessive deformation in the course of the entire test.

For Information

The samples were set into concrete haunching blocks of sizes (mm)

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EXAMINATION AND TEST (CONTINUED)

CLAUSE

8. 8.2

ASSESSMENT

Pass Pass

Pass Pass Pass

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JSE			ASSES
	MA	ARKING	
	Ma	arking of channel bodies	
	Sp	ecified marking	
	a)	reference to this standard, EN 1433 (if all requirements are met)	
	b)	appropriate class	
	c)	name and/or identification mark of manufacturer of the channel body, which may be in code	
	d)	Type of product (Type M or Type I)	
	e)	date of manufacture (coded or not coded)	
	f)	for channel units with inbuilt gradients the sequence on each unit	
	g)	marking of weather resistance grade for concrete drainage channels (N or W and +R if relevant)	
	Ac	tual marking	
	Vis	sible on body	

ACO 0.0 → Sealin 006

Label

	ACO Multiline Seal in V100S	CE
ACO	KL. A15-E600, Origin:GERMANY	16
NB: 86 RD 01	3280 1 DoP: ED/G1/1	051
	11 A11 W A1W AW 1111 111	





End of Report